

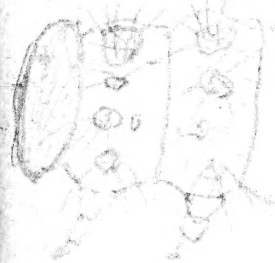
- 574



Calc.	.39	.58	.85	1.26	1.85	2.7	4.	$\frac{64}{100}$
Formed				1.2	1.8	—	4	

532

Little Cuckoo on grass Jefferson Highlands, N.H.  
 Hd. bilobed, shiny black, translucent whitish  
 mottling at sides, a patch at vertex of  
 each lobe and a broken inverted V mark  
 behind  $\Delta$ , a few setae; w. 1.2" Body a  
 little flattened, rather squatting. No. 10  
 feet normal. Feet large black with  
 short rather bristly black hairs mixed  
 with pale; iv very small, i-iii nearly on line,  
 ii only slightly protr. vi very short, leg plates  
 black.



Body with whitish point,  
 dotted with red dots very  
 strong stig. a black d  
 shade band filling in be-  
 tween vants 5-12, a mottled, brown streaked  
 lateral one & ridge of brown-black s-v.  
 Ash & anal pt. black. Ground color an ashy  
 whitish s-s band. Molt June 24 as before with  
 the white spaces smaller. Body longly mottled  
 streaked with black, a pale s-d line above  
 (sh hd 1.8)



red blotched between the warts 8-d & 8-s.

Hair short, stiff, black & white. Molt June 27  
Hd bilobed black,  $\Delta$  yellowish. Blade part on in large  
conspicuous freckled, leaving a number of white streaks  
on the sides, a streak over apex and a V-mark II  
to  $\Delta$ , lower  $\frac{1}{2}$  of  $\Delta$  ant. white. Body black, a white  
8-d line blotched with red between i-vii, side another  
with white, a white 8-s band passing over v, with  
orange blotches above it over the wing iv. Warts large  
i-iii & vi dark iv & v reddish. i-ii on 12  $\square$ . Dorsal  
black broken by light white dot close to incision  
spiracles white. Hair short, mostly black & white.  
most of white 8-v, i-iii contiguous, both large. [cf 30 B]  
Later the white marks are pale yellow.

Molt July 5 Hd 4  $\pm$  = 30 B g.v. (also see blann larva)  
= Asilarche alboceros

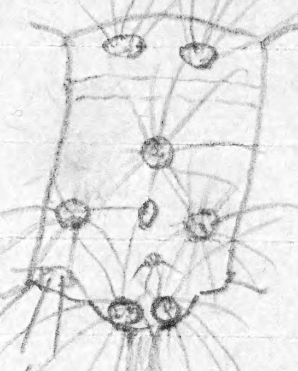
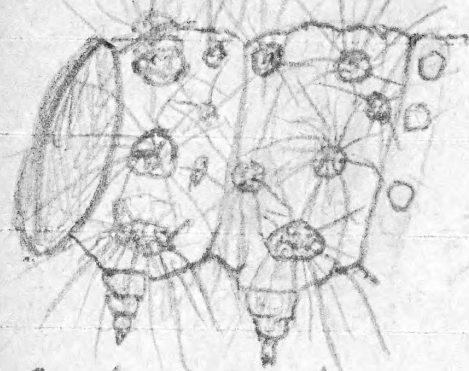
612 got stage May 27  
Hd 4.2 (sh. hd 3.1)  
no change (desc.  
from blann larva)



Stage I 1902  
BB612

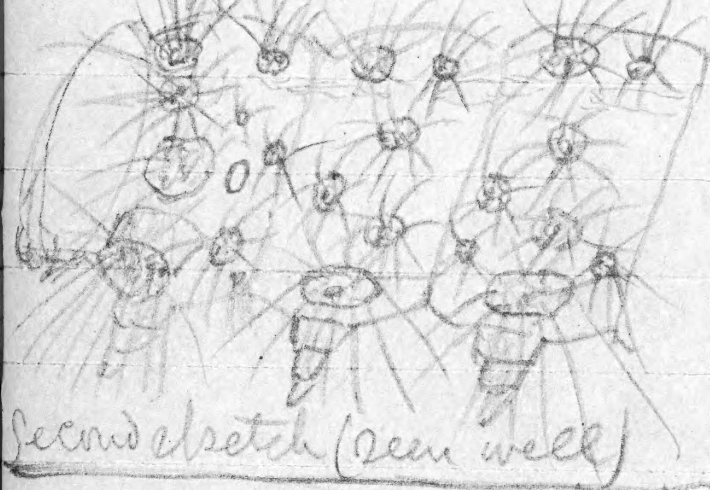
Calc.	.61	.92	1.4	2.1	3.2	ratio .66
Found	-	.9	1.5 $\pm$	2.1	3.2	4.2

(see below) 533 (see 612)



On poplar (P. trem.)  
Jefferson Hgts, Wt  
June 21 '95. Gray,  
flecked, soft hairy.

Body black with a faint white 8-d line  
Hair fine, soft, white, not very long but  
dense; appearance gray, joint 6 darker  
near black. Body rather flattened, anal  
feet spreading, divergent, 8-d warts on 2 large  
On 1 & 12 vi is a single wart, and ant.  
the upper ant. 2<sup>d</sup> wart is higher up. (sketch 9)



Molt June 27 Hd 1.5  $\pm$   
Warts much less prominent  
Body all covered with  
2<sup>d</sup> hair about like those  
from the wart. Lines of

a wart in front of iii, v lost in 2<sup>d</sup> hair. vi rather  
produced into a short lappet and 12 enlarged  
dorsally, arranged in a gently oblique row, whereas  
very plain before. Body gray, darker dorsally



an orange s-d line & narrow white lateral  
one. Hair soft, fine, dense, black & white, the  
dark hair predominating d. a series of orange  
ad-d. dots above i & ii. Hd gray, hairy.

Molt July 4 Hd soft blue gray, black dotted with  
fine short pile <sup>(Shad 2.1)</sup> w. Body flattened, a slight  
bump on 12, a large s-d tubercle on 2. Abdomen  
low, even, obsolete, vi produced into a short  
lappet. Hair fine & soft, not long. Blackst d  
pale & thick s-r. Lateral 2<sup>d</sup>. Segs 5 annulate.  
Dark gray on orange ad-d. dorsal dot on 2<sup>d</sup> & 4<sup>th</sup>  
annulets, a narrow s-d line & transverse bands  
concealed in folds <sup>in middle of 3 & 4</sup> of 3-4 and 4-5. Dorsum black  
dotted with blue leaving a narrow black ad-d  
dot on each annulet, those opposite the orange dot  
narrowed out a little. Lateral region more finely  
blue dotted with <sup>(light, subtle 2<sup>d</sup>)</sup> narrow faint. Pale longitudinal  
lines. Lappets a faint gray. Thoracic lappet largest,  
the abd. ones with post. part of vi most produced.  
A lateral black spot on 3, 4 and 12.


Molt July 10 Hd 3.2 ± as before. s-d above s-d line at the  
ant. & post. edge of each seg. a pale gray space, forming  
a series of interspersed lighter gray spots  
2 lappets on 2. More on abd. double.  
(See brown larva)

Evidently = *Phyllodesma americana*

534 = 25

Notodontina? on sugar plum Jefferson Highland  
N.H. June 25 1895. Egg. shells, 3 mm edge of  
leaf on arduous side. Spheroidal, flat at base  
O ground glass opaquish white 1.1 x .7 high  
reticulation linear but rather high &  
with rounded base, rather small & regular  
hexagonal. the pores at the angles distinct  
bead like, showing in both lights.

Larva Hd rounded, pale brownish <sup>green</sup> Body smooth  
shiny, translucent green with a faint  
white s-d line. 12 slightly enlarged, segs. <sup>4+</sup> an  
nulate, setae distinct, fine pale, pointed.  
Sets on the midrib and bumps each side. Setae  
normal, iv 58 post, v distinct.

(violet) 3 setae on leg plate  ant.  
abund.

is inconspicuous & obscure as also oth. abd. anal pl.  
Larva all pale green; no dark plates or tubercles.  
Anal feet rather slender & directed somewhat backward.

Molt June 28 Hd large, high, slight above 2,  
gen of bilobed, narrowing a little to vertex, Δ.



Small, green eye black; mouth brown, w. 1.2 mm.  
Feet normal, the anal rather weak, often not  
used. Setae fine, dark, but not very short. vi  
present, segments faintly 3-annulate.

Green, rather dark from the food & transparent  
a faint yellow sd line. A very transparent  
skin; tracheal line very distinct against food.

Molt July 5 Hd large higher than 2, slightly bilobed  
vertex hollowed behind, flattened before. nodules  
suture well marked, & small. Pale green,

not shiny, ocelli black w 2 mm. Body irreg.  
larv 3-4 annulate, tapering a little, 12 not

enlarged, 13 small, anal feet rather weak  
not elongated same pale green, not shiny

A broad pale yellow sd line, faint 2 & 13.

a narrow more obscure & more greenish lateral one  
setae fine and short, all pale. No other marks

Later a soft white bloom covers body, the tubercles  
forming slightly whitish granulations. The lateral

line is no more distinct than the tracheae

and looks it & sd distinct band seen a little

trans. streaked on the annulets. Later dist  
pruinose almost downy, missing even sd line some  
Anal rim faintly yellow. Sd line fainter at ends.

Molt July 10 Hd whitish green slightly shiny, shape round  
not at all below 2 tiny <sup>but</sup> slightly higher, indented  
labrum white, jaws & ocelli dark. Body green,  
with white bloom a broad not very distinct white  
sd line. Segs 4-5-annulate with large white  
flattened granules, like tubercles but non setiform  
sd line large transverse granular; anal rim  
pale yellow. Spiracles pale brown ringed. Setae  
fine & short, pale, normal, single. Sub on green  
leg plate. D. region whiter than lateral one.  
Hd 3  $\pm$  Later very pruinose white granular, sd white  
Anal rim yellow; Hd legs pruinose, jaws concolorous.

Molt July 18 Hd 4.6  $\pm$  High, not bilobed, rounded, & small  
vertex about level with 2, labrum white, jaws yellow  
green, whitish bloom above. Body green covered with  
flat white elliptical granules on the sides, under  
a more confluent d. forming a straight white sd  
line 3-12 composed of irregular granular areas  
spiracles yellowish with brown edge, anal rim  
yellow, leg plate green. The feet green.

Ocelli black centrally, whitish rimmed  
Setae very short, nearly obsolete, normal, but  
a considerable number on leg plate.  
Segments not very regular 8-annulate.  
Evidently = nodata gibbosa.

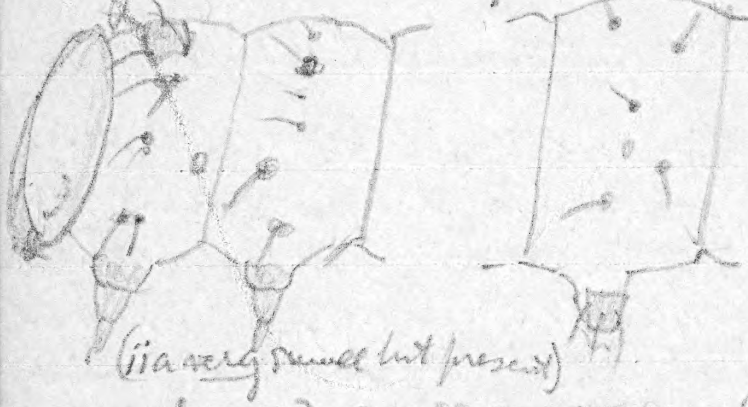
(see bloom example)



Calc. .38 .55 .78 1.12 1.6 2.3 ratio 70  
 Found .4± .5 .7 1.15 1.6 2.5±

535-538

*Eutegania*? on *Epilobium*, Jefferson Highlands



N.H. June 27 1895

Head bilobed, all pale brown, w. 4±

Body yellowish white

is enlarged 1st II, 5-7 also greatly enlarged but apparently only slightly enlarged and altered. 8th canal & leg. plate blackish. Tubercles brown, mostly minute, but those on 5-7 and 11 surrounded by large spots, those on 12 with small spots. Thor. feet dark. Abd. setae normal for stage I.

July 28 Same as first, a little more brown spotted. Setae fine pointed, tubercles black, subprimaries present. Ant. 1st a little smaller but not much, not noticeable except that lower bristles bent off the leaf. Rests with ant. end elevated.

Later tubercles black, conic, irregular in size. Brown marks around trunk/shirt. Body green from food. A dorsal line of irregular opaque white shading. July 2 (Sh. hd 57) Large black conical tubercles with long pale setae. Body greenish blotched with opaque white sep. d. and a few brown markings as in last

as 5-fold green appears in a series of white patches, the largest 11-12. Feet black, venter dark. Hair long distinct, rather stiff, white, perfectly single & normal for inst. Noct. (see blown larva)



stage. Feet black. Hd whitish, its tubercles all shiny black as on body, a little brown around mouth and eye. 4-7 & 12 form 2 humps as held by larva, apparently really a little enlarged.

July 5- (Sh. hd 7) Hd 1.2± Hd white, the black spot of before supplemented by many small dusky spots. The black tubercles form 3 trans. rows, a black dentate line above mouth. Body white a little tinted with orange on 5, 6 & 12 d. and along the region of its whole length. Tubercles large Δ black, hair all pale, rather stiff and long single. Body is mottled with brownish black in irregular streaks between the tubercles except 5-d where the white ground prevails broadly. Prim. of spiracles thoracic feet & leg. plates black.

July 8 (Sh. hd 1.15) Hd 1.5± white with many black spots, all spots of preceding stage equally black. Body as before, the black tubercles & numerous irregular marks velvety. The orange shades spread tending to form transverse bands, on 5, 6, 11 & 12 the faint orange bands are complete, on the other segs. a 5-5 spot with perhaps a hint of the orange above. The black marks are thickest ventrally, predominating, thick laterally, thin sd & along d. line. They form a series of irregular marks enclosing a broken white d. line of ground color. Feet black, hair long pale. The appearance is blue white black mottled with a white sd line & red bands, but this resolves itself with time as above. 5-fold becomes white patched, most distinct interseg 11-12. Orange bands more distinct fainter crossing middle of each seg 5-12.

July 10 Hd 2.5± Hd as before, white with many black spots of various shapes mouth & antennae black. The 5 has 2 dots at base a spot on each side is a short v-shaped one as app. The lobes & venter have several large rounded spots & some smaller sub-sternal ones. Body white the segs. banded with orange, obscure except on 5, 6 & 12 areas of 5 & 12 greatly bunched up. Tubercles large velvety black, but low conic or almost flat not produced. The velvety black marks on the body form narrow, irregular broken and mottled transverse lines, some not represented by abrupt marks, all broken sd as to give appearance of white sd band, about 6 per seg but so broken and irregular that there is no positive number. D. subconfused, forming certain branching marks irregularly, x or Y shape.



Calc. .64 .8 1.0 1.3 1.6 2.1 2.6 3.2

Found(6) - - - 1.3 1.6 2.1 2.6 3.2

" (536).65 .8 1.3 2.2 3.3

536 = 6 (June 14)

*Apatelode tenebracta* eggs from Miss Burton from  
surface from J. Doll. Laid June 25 1895.

Flat below, above rounded, flattened, eyes on rotting  
or a little hollowed in a ring near edge

translucent pale yellow, d. 1.5, height .4 mm

Reticulation faint, narrow, the depression  
rounded hollow, shallow, obscure, the edges

forming the reticulation which are consequently  
wider at 6 but hardly any breadth between

ones visible as high points at 6. At base is a  
distinct rim, 1 cell broad, thickened at margin

contents full of oil drops, more distinct than marks

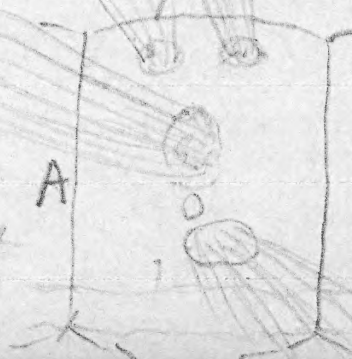
Hatched July 10 Hd whitish w. 6 mm. Body white

thickly covered with long fluffy white hair  
without evident warts. Hair very fine, thick

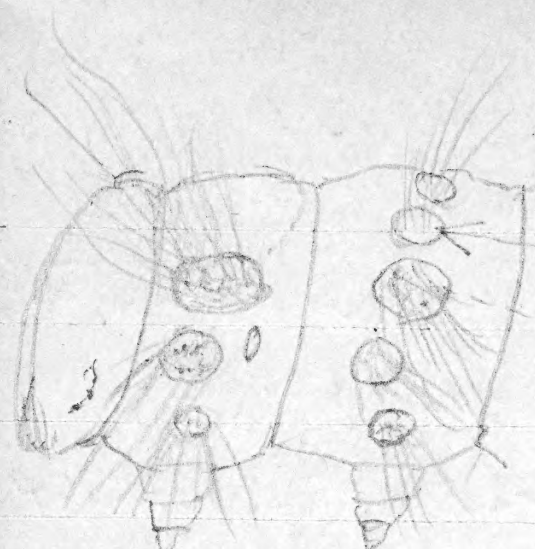
down like and long with a few more stiff  
hairs. A lot of d. hairs. A large lateral tuft

another below behind  
Serrae on leg plate

Wart areas perfectly flat



Spindle  
No vi seen  
granular



Drawn July 10. I think O.K. but  
can't be sure of this one  
(in line with iii)

Another → vi present but  
mostly concolorous granules

July 17. On 4  
A another in front  
at 4. Can't be  
very positive  
as warts are as  
concolorous and the

fluffy hair mixing everything up.

Pulled off some hairs. This OK. The hair looks a 4 in  
front may be 2<sup>d</sup> perhaps <sup>no hairs present</sup> and there is a  
single hair between i and ii. ii + iii is really part.

Molt July 19 Hd white with a d. row of quadrate black  
dashes 5-12. Hair very fluffy white, long. Hd. .8 mm  
warts about as before. 2<sup>d</sup> hairs not seen, if present  
can not tell from those bending over from warts.

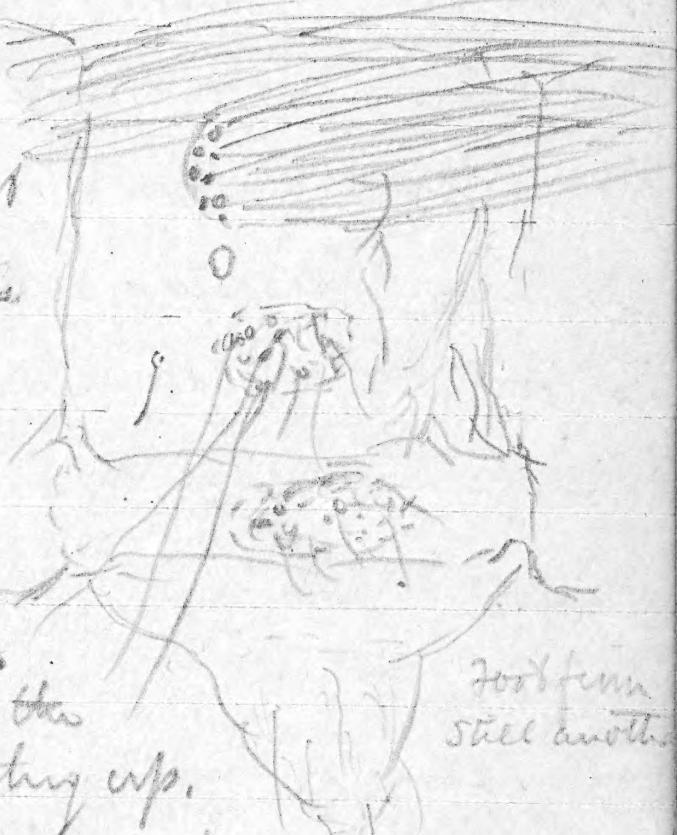
A few black hairs dorsally from 3, 4 and 12. (Sh hd .8)

Molt July 24 Same; white hair awful fluffy, 4 or 5 mm long  
fine & not curving backward. Hd 1.24 (sh hd 1.3)

Molt Aug 2 A white fluff. no pencils. Hair as before but very  
abundant long curving also curving body Hd white 2 mm ±  
a few black pencils at 12 d and a few black hair 3-4

Molt Aug 11 Hair fluffy white with long black joined  
but appearing single pencils on 3, 4 and 12 Body  
pale white with a row of lateral black spots be-  
side the d. ones. Hd. white 3.3 ±

(See blown larva)



Foot from  
still another

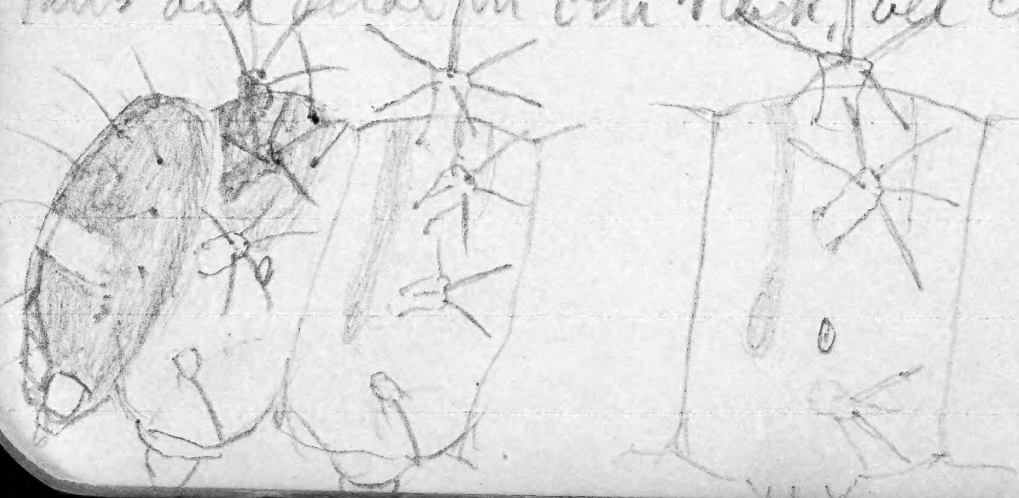


Calc. 1.07 1.61 2.44 (3.0) 3.7 (4.5) 5.6  
 Form 1? 1.6 2.5 3.2 3.7

537

Eggs of *Callosamia angulifera* from Univ. Winton  
 Elliptical, flattened above & below w a little  
 concave, one end higher than the other  $1.8 \times 1.4$   
 $\times 1.0-1.2$  mm. Surface irregularly bumpy granular  
 arranged indistinctly in reticulation. All  
 covered thickly with a layer of pure white  
 varnish. Color of egg itself slightly yellowish.

Hatched July 3 Hd black with a transverse white  
 band across mouth and another at upper part  
 of clypeus; w mm. slightly bilobed, rounded,  
 setae few. Vents elongate with a crown of pale  
 hairs, all of same size. Cth, anal pl, & thor.  
 feet black; body light yellow with smoky  
 trace of 2 trans bands per seg. reaching spiracles  
 a little more distinct toward extremities, blackish.  
 Vents and setae on cth black, all concolorous.



Had no  
 tulip tree  
 and they  
 refused all  
 else & died

ratio  $\frac{66}{81}$

More from Univ. Winton July 1896. Eating tulip tree.

Sted July 27 Hd 1.6 white, a black line across  
 above mouth and 2 joined trans. pale  
 above D. Body whitish, seg. twice trans.  
 banded with black on each side of the  
 tubercle. Tubs. all yellow, alitae, with  
 weak seta and 6-crown. Cth pale ex-  
 cept a single band. Setae pale.

Sted Aug 2 Hd whitish a narrow black line  
 across lower part of D, a spot in middle  
 of lobe & one on eye. w. 2.5. Body frosted  
 greenish white, tubercles reduced to black  
 buttons except D2 yellow, D3-4, pink  
 with black basal ring and D12 yellow with  
 black ring, all with fine small pale  
 crown. Anal pl yellow edged w. with  
 black before. Feet green anal faintly  
 black edged. D34 salmon, coral red or yellow.

[Two small ones shed Aug 8, lobs 3.2, same but  
 horns D3-4 12 smooth, black buttons  
 reduced to anal elevated spots, black spot  
 on head smaller. 7 large ones did not, but]

Sted Aug 9 Hd 3.7 smooth, white, tubercles



represented by shiny black spot except  
① 3-4 anal red and ① 12 yellow with  
faint black rings. Black dot on lobe  
and eye, imperfect ring on anal foot.  
Lung brown smooth.

Shed Aug 13 but all dead. One only partly  
shed, all that shows just as before.

538  
CAL. ANT. 115-88

11 eggs laid by ♀ *Alypia langtonii* on leaves  
of *Epilobium* in a jar, Jefferson Highlands June 29  
Laid on the under side close to the projecting  
midrib. ♂ flat at base, low conical, a little  
pointed at apex. Microsculpture depressed, surrounded  
by 2 concentric rings, granular reticulate; from  
the outer ring the round headed ridges run to  
under surface. The ridges under lens are a series  
of rounded granules, but they alternate on suc-  
cessive ones so that the grooves are many as  
usual. Microsculpture a circular cup-shaped area  
of one circle of cells radiating from a center its  
edge forming the first ring. From there the ridges pass  
gradually over the outer ring becoming more distinct  
the ridges increase of prominence, not worked, owing  
to their granular nature. Diam. .55, height .3±  
Whitish, not shiny, marked with dark red-brown or  
an irregular blotched ring or broken spots different  
in each egg. Hatched July 8 Shape of 535-2 looking  
Back whitish, food green when eaten, tubercles



\*occidentalis

+superans

539 = 389

large, black. Hd pale brown, varying in shade in different larvae, eye black. No looping for a while ate the Epilobium. Full of green food. Like 535.

Molt July 11 Hd .5 ± pale. Not different from 535 II

Molt July 14 Hd .7 ± Like 535 III Tubercles much larger than before, conic; setae long and distinct.

Molt July 18 Hd 1 ± Essentially like 535 IV. Sd white band seems narrower, only a breaking of lines & marks. S-V white patches, esp on 11-12.

Molt July 21 Hd 1.6 ± = 535 V The black marks form irregular transverse black lines, broken and confused. Probab. 8 per seg. as in octomaculata

Molt July 23 Hd. Hd 2.3 ± Cth red. Like 535 VI compared with brown larva, seems same, very some in shade. Black marks larger & smaller. 535 is a rather pale one.

Turned dirty purplish July 28, losing the yellowish orange tint of the transverse bands, the yellow fringed spread from the bands and tinted large S-V white patch on 11-12.

Always May 15 1896 *Allypica octomaculata* !!  
" Aug 12 1897 ♀ *laetior*, all spots white!

+ Acronycta on yellow birch Jefferson Hgts. N.H.  
Hd White, 4 black dots in each lobe, 1 apex, 1 side 1 eye, 1 beside Δ. Body white, dark brown patches d. on 2, 5, 8-9, 12. Warts black, a narrow white d. line. Warts with long setae & bristles crown of small enlarged ends, a few of which stray off on skin as 2<sup>d</sup>. Hair black & white. D. warts spreading onto other segs. faintly 12 □ it warts i-ii □ Hd 53 ±  
+ *Allypica* on Angerplym capple. <sup>ash hd. 85</sup> June 24, 1895  
Hd white, pointed lobes, black patch at vertex, one each side of clypeus & one over eye. W 1 mm. Body white, warts i-iii\* all black (the rest pale\*) pointed conic with crown of hair all body blackly covered with short 2<sup>d</sup> hair enlarged at tip. 12 i-ii □. Dorsum broadly streaked with dark brown, cut by d. & s-d white lines. Hair black & white some of the 2<sup>d</sup> even black. Warts normal, is rather small stig. post. all nearly in a single transverse line. \* ~~not June 25~~ Hd black, a white spot



\* Moist July 7 = 389 g.w. Hd.  $3.8 \pm$  shading into black below. (See Vannerly) 2<sup>nd</sup> hair practically gone.

gemmae at apex  $\Delta$ , white streaks on sides apices of pointed lobes pale brown; has few black hairs w.  $1.4 \pm$  Body whitish as before d, 3<sup>rd</sup> line white, distinct. Sides shaded brownish, 13 pale. 2<sup>nd</sup> hair short, club-shaped. Tubercles actually pale but more or less closely mixed with dusky brown. Later broad faint reddish patches cover i-ii on abd. segs.

\* 5th July 1 Hd black, black dark red at apices of lobes. Angulus pale streaks on sides  $\Delta$  over  $\Delta$  yellowish slightly white, rather obscure. w.  $2.4 \pm$  Body dull purplish, d. line pale, shading into reddish on center, 4 each seg. 1 around i-ii, 3<sup>rd</sup> apex purple, 5<sup>th</sup> line white broken below with purple, a faint reddish abg line. Ventrals black, i-ii containing pale rings, 12  $\square$  nearly all black. The feet & leg plates black. Hairs black d, white s-v 2<sup>nd</sup> very much reduced, short, fine black, not evident with lens. Pointed tipped numerous. 13 pale like sides. 14 black tubercles pale. Hairs long & white s-v like that from 1st.

Calc.	.22	.34	.52	.78	1.19	1.8	val. 66
Fund.				.8	1.15	1.5	

540

Slender, green noctuid on dogbane, looks like *Barroetia* but setae shorter and sparser web; solitary. Hd pale yellowish, tubercles small, eyes black, w.  $.8 \pm$  Body slender, cylindrical, green, feet short white the anal divergent. Tubercles conical, not moderate, long, white, single, normal, iii rather close to spiracle, 14 feet, 2 subty. 3 on leg plate. No marks. tracheae evident with lens but no line. Length 11 mm diameter of body, 1 mm (sh hd 8)

Moist July 15 Hd  $1.2 \pm$  Same. Maximum folded (sh hd 1.15)

Moist July 15 Hd  $1.8 \pm$  " No closed July 21

Moist July 11 1896 - a Deltoide.

(Cat no 12133)

*Spargaloma seppunctata*



541 = 498

C. regular eggs from Mrs. Winton laid June 25.  
 Hatched July 10 Velvety black a whitish s.d. shade  
 comes out centrally defining a series of black  
 intersymmetrical elliptical spots; a row of  
 white s.v. streaks absent at ends. Horns all  
 brown black, the club at ends of thoracic ones  
 black. Same can erect in degree from 1-3  
 the thoracic antennae. d. shiny black, labrum  
 brown. <sup>(shhd 1.2)</sup> Horns with max 8 way long as club  
 single d on 12 (see specimen 1994 for details of horns)  
 Yaws set in upper surface, curled J type.  
 Molt July 21 Hd dark red brown. v. much more  
 pale. 1.8 mm Horns much as before in  
 relative length, 11 at max; the long horns have  
 no club tips but are simply funnels and  
 covered with numerous short branches like  
 the short ones. Red color as before but the  
 pale brown shade, defining the elliptical  
 s.d. black areas have spread to become  
 ground color. Hence, body brown, a d. black

black line & s.d. row of elliptical spot on  
 and edge of segs. an oblique line from ant.  
 edge of seg 1 back to base of foot, black, broader  
 below of a fulvous shade. A few lateral black  
 streaks, yellow. Feet & ventr black. Thorax mostly  
 shaded with black a red ring at base of  
 long horns on 3 & 4. Horns now 6 long on 2-4 &  
 single on 12, short on rest. ② much shorter long 3-4  
 short 2, 5-13. ③ short. ④ 2-6, 12, 13 with short.  
 Molt July 24 Hd 2.53 higher than wide, shiny  
 black. Antennae brown, fourth under 2. Long  
 horn ① on 2 ①② on 3-4 ① 12 with a dark shiny  
 white shaft & many short pointed branches  
 black or black tipped. Other spines short  
 with 5-7 branches pale with black tips  
 Body indistinct brown black d 2-4, on feet  
 & in a stripe before spiracle ending above  
 a brownish white slightly oblique s.v.  
 shade which runs from ant edge of seg.  
 to 11+12 a reddish shade at base of the long  
 horns. Longest horns about 5 mm. Segments  
 long the club does not extend far.  
 Molt Aug 1 (shhd 2.6) Hd. 4 blackish tan brown  
 pale in all the sutures and d. Body blackish  
 brown with the oblique s-s fleshy white  
 bands broader above with black. Horns  
 pinkish whitish, the ends of the short  
 thoracic-like branches and tips of horns



black. A reddish shade d. between. ① 3-4  
 ant. legs reddish except a black outer stripe.  
 Large 8th segment fleshy with 2 blackish  
 bands on each side. Spine black.  
 Molt July 18 turning green on back. Body light  
 green, rounded black on abd, esp. ventrally.  
 Broad oblique greenish white stig bands  
 edged above black. Spine black. Large black  
 horns black, the long thoracic ①① red at  
 base. The feet & anal plates (3 large)  
 red. Long abd feet reddish with a  
 wide black stripe down the outside.  
 Hd reddish with a large black patch  
 over face of each lobe. w. 6 mm.

Stimulea

542 = 546

Eggs of "Eulimnoides scapha" from Miss Norton (pp.  
 Doll's pupae) laid July 10, 1895. [Eggs oval, very  
 flat, almost as thin as paper, thin shelled, laid  
 in a mass of 50 or more, imbricate in ar-  
 rangement, rows like shingles on a roof, neatly  
 and regularly set. Transparent, yellowish,  
 clear, the shell covered with most irregular  
 hexagonal, pentagonal or even quadrilateral  
 reticulate opaque lines, rarely one of these cells  
 near is circular. The lines are narrow, not  
 perceptibly raised, but very distinct. Surface  
 smooth and level, or a little pitted here  
 and there. <sup>They hatch in 10 days</sup> 1.8 X 1.2 X 0.1 mm.]

Hatched July 20. Structure of stimulus. (Entirely light  
 yellow, no marks. Horns a little whitish.)

Hd **D** Development. Body clear yellow; eye brown. X  
 3 mm (Calc 2.5) w. 3 mm. [The body lies curled on its side, the  
 head and tail touching, greatly flattened laterally.  
 When it begins to hatch, it shortens and thickens, as  
 if swelling up, so as to be much higher than  
 before and <sup>the</sup> less convex <sup>which is not a sign of</sup> than before.







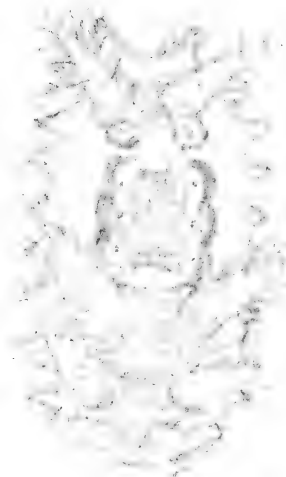
1910. Aug 4. Litter 546. 72. Color very yellow and dirty. The hair  
 fine and very short - 10 to 12 mm long, almost as  
 thick as down on 10. Hair all over pale yellow, darker on 2, 3  
 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

5245 219 6. 1.2

$$543 = 527$$

Eggs from captured ♀ Lycimnobia glauca  
July 15 1895. Scattered irregularly over the whole  
of the dish. Probably laid singly on rocks,  
adhering. ... identified the female.

more flattened  
rounded; a  
very good pe-  
ticle sur-  
face and  
well defined  
in the center  
a perfect  
oval a few  
times the  
width of the



but both will  
be used in the  
retrograde but  
attend in being  
it is not  
A simple, angular  
are rather large  
white. The  
a little green  
color. 5 mm  
black, w. 3 mm

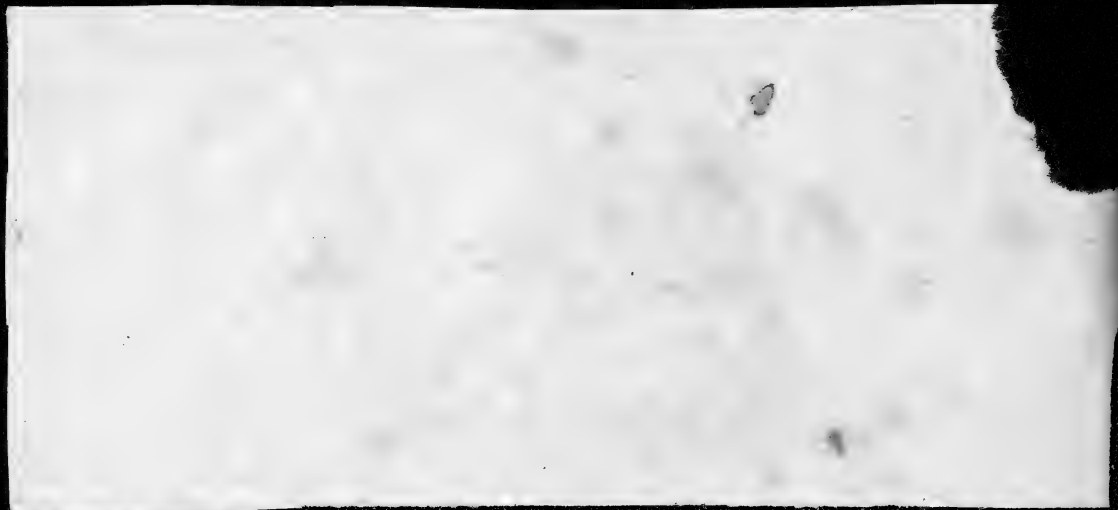
Did not get to the train, very pale. Took  
the car to go. Did not take the medicine.

Trakey black, smooth  
down, Hair long  
scattered, single  
from smooth



Find  $\frac{dy}{dx}$  using III  $\times 10$







[illegible]

2018-19-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039-1040-1041-1042-1

$$543 = 527$$

Eggs from captured ♀ Lycomorpha pholus  
July 15/1895. Scattered irregularly over the sides  
of the dish. Probably laid singly on rocks.  
Adherent. Oblate, apicoid, the basal half  
more flattened than top one but both well  
rounded, a little elongated in one direction but  
not just perceptible. The true reticulation but  
the surface is distinctly flattened in being  
oval areas the edges of which are not  
defined into elevations but simply, irregular  
of the surface. These areas are rather large  
in proportion to the egg, regular. The egg is  
really a polyhedron. Surface a little granular  
shining dark bluish green; lower 5 mm.

Hatched July 27 Hd. blackish, black, w. 3 mm.  
Body all white to the brown long. pale. black  
also some spots. Not to be lost, the entire

Irishy Black, mouth  
brown. Hair long  
dark, single  
from small



concolorous tubercles, VI not seen, tubercles very  
obscure hair fine, pale except a few of  
the longer d. hairs on 3 & 4, 11, 12 which are  
blackish with black tubercles. Length 1.5 cm

544

(4227) Egg like Notodactylus or Pteris, Jefferson  
Highland, W.H. June 28, 1895 - Caudal, base  
flat, apex also a little flattened; white, smooth  
shiny. opaque 1 x .75 high. Reticulation most  
narrow, not high. In line & obscure, irregularly  
horizontal, the areas between finely dotted &  
punctured. Notodactylus White, sd & c th.  
Black, to skipper. Refused Pteris, ate grass and  
made a house on it, by writing two black  
Csh a narrow line across base with sd black  
dot. Body all white, thick, neck small, but  
round, bottom like shiny black, the color going  
over into black. Segs somewhat annulate with  
fine, distinct, stiff normal 1-4, 11 & 12 like  
5-10. No hair of d hairs. On 1 the sd spot con-  
tains 2 setae above the one before spiracle of  
jointly separated from c-th. 2 setae before  
spiracle 4 on c-th. On 3-4 normal (I) but 11  
to seem obscure on 3 small on 4, in Hd. 53-  
molt July 16. Body covered during night with  
short 2d hair from distinct tubercles



in about 10 transverse rows on indistinct  
annulet. On 2nd row primary setae. Head  
capitulum pale, reticular. Hd & Cth shiny  
black, Cth very narrow; a d. spot not wide  
red, whitish a darker than on dorsum.

Molt July 23 (Shld 2.7) Hd round, somewhat shaped and  
dark chocolate brown. Body present white,  
dorsum dark brown. S-V. Cth represented  
a narrow transverse black line <sup>at post-edge</sup> on each  
on body. Thoracic feet very pale brown.  
Tarsi a reddish shade on first part of body.

Molt Aug 4 (Shld 1.2) Hd more w. a little, saddle  
pale white, a red dot shaded d. and a faint  
white d. line. Slightly fainter, the  
pale part, but the minute tubercles dark  
giving a fine dotted. S-V. region a little  
more whitish. Cth narrow, pale with  
blackish spots a border d. also on darker  
d. line, but dorsum all very faint.

Molt Aug 21 (Shld 2.0) Head large, rounded  
slightly granular and pale, dark

brown fading into a pale reddish tint  
on the center of the lobes, black in the  
sutures and post. edge sept neck. W.  $3.2 \pm$   
Cth narrow, transverse, pale anterior, a black  
post rim. Body with small neck, robust,  
a little flat ventrally of usual Hesperid  
shape, feet minute pale brown pilose with  
long hairs from round anal rim. Color  
sordid yellowish white, darkened by the  
minute black tubercles of the abundant secondary  
pile. A dark brown d. and lateral line  
with trace of a d. in shade and spots  
Sep. indistinct  $7 \pm$  annulate, each <sup>sep.</sup> shaded with  
faint red, but faint on first part. The first pale  
a neat, white patch ventrally on 11 & 12  
the latter bisected - on vent side of sep.  
ate sparingly till Sept 21, then gave a little  
liquid as blood & then it sick. Sept 22  
fell down rather suddenly & stayed but  
then slowly when handled



545

Large oval black larva in the sand, Jeff H.  
July 16 1895. Smooth, rather shiny, brown  
granular oval black, rather shiny,  
marked with orange in a d. line 13 post  
in a diagonal band, broad, but blots  
2-4, represented by spots on 18, postering  
with smaller and nearly obsolete on  
4th. 15th-18th same oval black, very little  
under 2 or 4 1/2 mm. Length about 40 mm  
An orange dot on cervical shield with  
3 dots same arranged as in *Arctianus*. Head  
I find but none of the stig. post.

546 = 249

July 16

Egg of *Schneestomus* from *W. S. Spentz*, laid  
July 8 1895. Elliptical, very flat laid in a  
imbricated mass with anodulate regularity  
shiny, rather dark yellow  $1.8 \times 1.4 \times .17$   
broader in proportion to width than "*scapha*".  
Reticulation sandy, discernible, round, some  
at all angular, obscure, linear, irregular  
The surface is much more uniform than "*scapha*".  
Stage III from Miss Weston (July 13) Elliptical, rounded  
higher than 4-5, diminishing post. Ridges, not  
sharp, all rounded. <sup>sd</sup> 11th processes fleshy, horn  
like, 3, 4, 5 and 11, 12 long, acute, slender  
spines; 7, 6, 9, 10, short, a weak with 3  
or 4 spinous. 13 short, spinous; apparently none  
on 6 and 10 or but a trace of 10 or 2 setae. Lat. tral  
Row 3-13, none on 5, moderate, spinous, equal  
those on 3-4 longer especially the one on 9, there's  
only a few spinous below the 5th one. S-V edge  
marked ridge. S-P line clear, coarse with min  
ute spinous granules, small, quite close  
set without any tubercles. base like



\* He then the pen. - joined out - see above  
and yet conclude -

Ordinary skin spines. Color light green, all the horns translucent whitish except sd on 4 which has a faint violet tint, on 5 flake purple brown and on 11 pale purple. A sd curved black line along sd ridge, the parannules of dorsal streak over the dorsum on 3-5 & 11 about 2 per seg. leaving a space or rounded patch of ground color between the pair of horns, that on 5 especially narrow. A sd band broken on 6 & 10 and on 7-9 indented along by a white band. The d. space here filled is with a blackish shade which forms square patches 12-13 and lateral region immaculate. Length 3 mm, wtd. .5 ±. Head with brownish, Δ green, eye black.

Spines tapering sharply pointed, the tip a separate piece  $\longrightarrow$  Later d. region var.

applicable than 5-6, and the d. patches from lower  
than sharp spots between the leaves and blankets  
and in part (i.e. on 5-6 and 10-11) onto whole leaf

July 21 - 1900. To the ... of ... and ...  
July 22 - 1900. From ... to ... and ...

7/27/20, 8, 9 AM. This vehicle 1 wheel made repeated small sound @ on 6 and 10 that small & close to the large horns on 5 and 11 respectively.

[Time from Mrs. Hutton rec'd July 20. Hd's 5 and 8 others shed  
by birds. Hd's 7 & 9 shed also probably. Shed was different. no [?]  
Vest as before more defined. Home denser covered  
with short spines. 3-4 both ① & ② pale flesh pink 5 and  
11 purple, 12 yellowish, the rest nearly colorless. On  
6-10 practically obsolete (representative of or setae in ality)  
② 5-12 small. G. & L. at region of 3-5 & it of 11 purple except  
the small paired greenish-impressed spots each an  
unpaired median yellow oval one on 5 and 11 & black spot  
on 7-9 blackish, a white side under & curved black  
line brown ground green yellow d. on 5-6 and 10-11.  
Lateral repeat whitish. A pair of white oval spots  
between holo. O on 11 & 12. On 13 very small skin  
densely minutely spinose granular, with lower  
elongated into short spine with round tubercle  
base. Stomping spine with narrow base no repeat.  
The impressed areas are smooth, a single d. al-  
ternating with row of adaxial serrulae intra segmen-  
tal ones, but all with all lateral edges. Head brown  
shapely chitinous. {On the 6, from [?] in the stage, one found  
(Eggs in water Aug. 25) [?] [?] [?] [?] [?] [?] [?] [?] [?] [?]  
July 25 still active, the last [?] [?] [?] Sample 5.7 mm long. Song on  
back of leaf July 26 [?]

Wet July 29 The same, and like mistle; Hd. 1 mm  
 ① on 6-10 still present, rudimentary as before  
 no!! an even. Did not molt because molt July 30 then  
 by tide and changed. Hairs short but they were  
 much longer, ① on 6-10 very much smaller.  
 Skin densely covered with short spines, curved  
 from the apices, those on the long hairs being  
 considerably elongated & pointed. S (sep.) on front  
 area almost ~~entirely~~ the ad-d small  
 pale smooth skin elongated scarcely visible  
 without lens. Spine smooth, long straight  
 ending in a hook with curved separate  
 a few tiny ones on ① 6-10. Sd almost over  
 arch, hairs proportioned as in next. on  
 3-4 flesh color, 5 & 11 dark purple brown

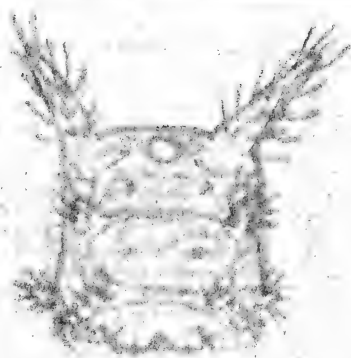


holocentrus  
all the

then color covering 3-5 to ② and 11 to  
below ② also a round d. patch midly-  
capped all around with white and along  
side of black line, then white & black marks  
repeated on 6 eye separated from d. patch  
by a yellow spot. On 5 & 11 a round d. patch  
yellow 12 with a white oval d. patch  
P. 4 and 12 ② light yellow green, ③  
and narrow subventral colored. a  
small lateral indented shape on  
small like deep stripes. length 7 mm. 199  
W. head 1.3 ±. No. 12, 13 colored like ②  
along with 12. eye line on 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000. 1001. 1002. 1003. 1004. 1005. 1006. 1007. 1008. 1009. 1010. 1011. 1012. 1013. 1014. 1015. 1016. 1017. 1018. 1019. 1020. 1021. 1022. 1023. 1024. 1025. 1026. 1027. 1028. 1029. 1030. 1031. 1032. 1033. 1034. 1035. 1036. 1037. 1038. 1039. 1040. 1041. 1042. 1043. 1044. 1045. 1046. 1047. 1048. 1049. 1050. 1051. 1052. 1053. 1054. 1055. 1056. 1057. 1058. 1059. 1060. 1061. 1062. 1063. 1064. 1065. 1066. 1067. 1068. 1069. 1070. 1071. 1072. 1073. 1074. 1075. 1076. 1077. 1078. 1079. 1080. 1081. 1082. 1083. 1084. 1085. 1086. 1087. 1088. 1089. 1090. 1091. 1092. 1093. 1094. 1095. 1096. 1097. 1098. 1099. 1100. 1101. 1102. 1103. 1104. 1105. 1106. 1107. 1108. 1109. 1110. 1111. 1112. 1113. 1114. 1115. 1116. 1117. 1118. 1119. 1120. 1121. 1122. 1123. 1124. 1125. 1126. 1127. 1128. 1129. 1130. 1131. 1132. 1133. 1134. 1135. 1136. 1137. 1138. 1139. 1140. 1141. 1142. 1143. 1144. 1145. 1146. 1147. 1148. 1149. 1150. 1151. 1152. 1153. 1154. 1155. 1156. 1157. 1158. 1159. 1160. 1161. 1162. 1163. 1164. 1165. 1166. 1167. 1168. 1169. 1170. 1171. 1172. 1173. 1174. 1175. 1176. 1177. 1178. 1179. 1180. 1181. 1182. 1183. 1184. 1185. 1186. 1187. 1188. 1189. 1190. 1191. 1192. 1193. 1194. 1195. 1196. 1197. 1198. 1199. 1200. 1201. 1202. 1203. 1204. 1205. 1206. 1207. 1208. 1209. 1210. 1211. 1212. 1213. 1214. 1215. 1216. 1217. 1218. 1219. 1220. 1221. 1222. 1223. 1224. 1225. 1226. 1227. 1228. 1229. 1230. 1231. 1232. 1233. 1234. 1235. 1236. 1237. 1238. 1239. 1240. 1241. 1242. 1243. 1244. 1245. 1246. 1247. 1248. 1249. 1250. 1251. 1252. 1253. 1254. 1255. 1256. 1257. 1258. 1259. 1260. 1261. 1262. 1263. 1264. 1265. 1266. 1267. 1268. 1269. 1270. 1271. 1272. 1273. 1274. 1275. 1276. 1277. 1278. 1279. 1280. 1281. 1282. 1283. 1284. 1285. 1286. 1287. 1288. 1289. 1290. 1291. 1292. 1293. 1294. 1295. 1296. 1297. 1298. 1299. 1300. 1301. 1302. 1303. 1304. 1305. 1306. 1307. 1308. 1309. 1310. 1311. 1312. 1313. 1314. 1315. 1316. 1317. 1318. 1319. 1320. 1321. 1322. 1323. 1324. 1325. 1326. 1327. 1328. 1329. 1330. 1331. 1332. 1333. 1334. 1335. 1336. 1337. 1338. 1339. 1340. 1341. 1342. 1343. 1344. 1345. 1346. 1347. 1348. 1349. 1350. 1351. 1352. 1353. 1354. 1355. 1356. 1357. 1358. 1359. 1360. 1361. 1362. 1363. 1364. 1365. 1366. 1367. 1368. 1369. 1370. 1371. 1372. 1373. 1374. 1375. 1376. 1377. 1378. 1379. 1380. 1381. 1382. 1383. 1384. 1385. 1386. 1387. 1388. 1389. 1390. 1391. 1392. 1393. 1394. 1395. 1396. 1397. 1398. 1399. 1400. 1401. 1402. 1403. 1404. 1405. 1406. 1407. 1408. 1409. 1410. 1411. 1412. 1413. 1414. 1415. 1416. 1417. 1418. 1419. 1420. 1421. 1422. 1423. 1424. 1425. 1426. 1427. 1428. 1429. 1430. 1431. 1432. 1433. 1434. 1435. 1436. 1437. 1438. 1439. 1440. 1441. 1442. 1443. 1444. 1445. 1446. 1447. 1448. 1449. 1450. 1451. 1452. 1453. 1454. 1455. 1456. 1457. 1458. 1459. 1460. 1461. 1462. 1463. 1464. 1465. 1466. 1467. 1468. 1469. 1470. 1471. 1472. 1473. 1474. 1475. 1476. 1477. 1478. 1479. 1480. 1481. 1482. 1483. 1484. 1485. 1486. 1487. 1488. 1489. 1490. 1491. 1492. 1493. 1494. 1495. 1496. 1497. 1498. 1499. 1500. 1501. 1502. 1503. 1504. 1505. 1506. 1507. 1508. 1509. 1510. 1511. 1512. 1513. 1514. 1515. 1516. 1517. 1518. 1519. 1520. 1521. 1522. 1523. 1524. 1525. 1526. 1527. 1528. 1529. 1530. 1531. 1532. 1533. 1534. 1535. 1536. 1537. 1538. 1539. 1540. 1541. 1542. 1543. 1544. 1545. 1546. 1547. 1548. 1549. 1550. 1551. 1552. 1553. 1554. 1555. 1556. 1557. 1558. 1559. 1560. 1561. 1562. 1563. 1564. 1565. 1566. 1567. 1568. 1569. 1570. 1571. 1572. 1573. 1574. 1575. 1576. 1577. 1578. 1579. 1580. 1581. 1582. 1583. 1584. 1585. 1586. 1587. 1588. 1589. 1590. 1591. 1592. 1593. 1594. 1595. 1596. 1597. 1598. 1599. 1600. 1601. 1602. 1603. 1604. 1605. 1606. 1607. 1608. 1609. 1610. 1611. 1612. 1613. 1614. 1615. 1616. 1617. 1618. 1619. 1620. 1621. 1622. 1623. 1624. 1625. 1626. 1627. 1628. 1629. 1630. 1631. 1632. 1633. 1634. 1635. 1636. 1637. 1638. 1639. 1640. 1641. 1642. 1643. 1644. 1645. 1646. 1647. 1648. 1649. 1650. 1651. 1652. 1653. 1654. 1655. 1656. 1657. 1658. 1659. 1660. 1661. 1662. 1663. 1664. 1665. 1666. 1667. 1668. 1669. 1670. 1671. 1672. 1673. 1674. 1675. 1676. 1677. 1678. 1679. 1680. 1681. 1682. 1683. 1684. 1685. 1686. 1687. 1688. 1689. 1690. 1691. 1692. 1693. 1694. 1695. 1696. 1697. 1698. 1699. 1700. 1701. 1702. 1703. 1704. 1705. 1706. 1707. 1708. 1709. 1710. 1711. 1712. 1713. 1714. 1715. 1716. 1717. 1718. 1719. 1720. 1721. 1722. 1723. 1724. 1725. 1726. 1727. 1728. 1729. 1730. 1731. 1732. 1733. 1734. 1735. 1736. 1737. 1738. 1739. 1740. 1741. 1742. 1743. 1744. 1745. 1746. 1747. 1748. 1749. 1750. 1751. 1752. 1753. 1754. 1755. 1756. 1757. 1758. 1759. 1760. 1761. 1762. 1763. 1764. 1765. 1766. 1767. 1768. 1769. 1770. 1771. 1772. 1773. 1774. 1775. 1776. 1777. 1778. 1779. 1780. 1781. 1782. 1783. 1784. 1785. 1786. 1787. 1788. 1789. 1790. 1791. 1792. 1793. 1794. 1795. 1796. 1797. 1798. 1799. 1800. 1801. 1802. 1803. 1804. 1805. 1806. 1807. 1808. 1809. 1810. 1811. 1812. 1813. 1814. 1815. 1816. 1817. 1818. 1819. 1820. 1821. 1822. 1823. 1824. 1825. 1826. 1827. 1828. 1829. 1830. 1831. 1832. 1833. 1834. 1835. 1836. 1837. 1838. 1839. 1840. 1841. 1842. 1843. 1844. 1845. 1846. 1847. 1848. 1849. 1850. 1851. 1852. 1853. 1854. 1855. 1856. 1857. 1858. 1859. 1860. 1861. 1862. 1863. 1864. 1865. 1866. 1867. 1868. 1869. 1870. 1871. 1872. 1873. 1874. 1875. 1876. 1877. 1878. 1879. 1880. 1881. 1882. 1883. 1884. 1885. 1886. 1887. 1888. 1889. 1890. 1891. 1892. 1893. 1894. 1895. 1896. 1897. 1898. 1899. 1900. 1901. 1902. 1903. 1904. 1905. 1906. 1907. 1908. 1909. 1910. 1911. 1912. 1913. 1914. 1915. 1916. 1917. 1918. 1919. 1920. 1921. 1922. 1923. 1924. 1925. 1926. 1927. 1928. 1929. 1930. 1931. 1932. 1933. 1934. 1935. 1936. 1937. 1938. 1939. 1940. 1941. 1942. 1943. 1944. 1945. 1946. 1947. 1948. 1949. 1950. 1951. 1952. 1953. 1954. 1955. 1956. 1957. 1958. 1959. 1960. 1961. 1962. 1963. 1964. 1965. 1966. 1967. 1968. 1969. 1970. 1971. 1972. 1973. 1974. 1975. 1976. 1977. 1978. 1979. 1980. 1981. 1982. 1983. 1984. 1985. 1986. 1987. 1988. 1989. 1990. 1991. 1992. 1993. 1994. 1995. 1996. 1997. 1998. 1999. 2000. 2001. 2002. 2003. 2004. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092. 2093. 2094. 2095. 2096. 2097. 2098. 2099. 2100. 2101. 2102. 2103. 2104. 2105. 2106. 2107. 2108. 2109. 2110. 2111. 2112. 2113. 2114. 2115. 2116. 2117. 2118. 2119. 2120. 2121. 2122. 2123. 2124. 2125. 2126. 2127. 2128. 2129. 2130. 2131. 2132. 2133. 2134. 2135. 2136. 2137. 2138. 2139. 2140. 2141. 2142. 2143. 2144. 2145. 2146. 2147. 2148. 2149. 2150. 2151. 2152. 2153. 2154. 2155. 2156. 2157. 2158. 2159. 2160. 2161. 2162. 2163. 2164. 2165. 2166. 2167. 2168. 2169. 2170. 2171. 2172. 2173. 2174. 2175. 2176. 2177. 2178. 2179. 2180. 2181. 2182. 2183. 2184. 2185. 2186. 2187. 2188. 2189. 2190. 2191. 2192. 2193. 2194. 2195. 2196. 2197. 2198. 2199. 2200. 2201. 2202. 2203. 2204. 2205. 2206. 2207. 2208. 2209. 2210. 2211. 2



Length	Wing
Aug 25 19	
" 26 21	
" 27 20.5	
" 28 23	
" 29 22	
" 30 22.7	horn 3.5



3/2 Stage VII  
ant legs 11.5

Sept 1 19 seems stopped eating.

Spun Sept 2

Others on  
willow  
hickory  
myrica

Calligraphers present  
in patches on the  
upper side near  
the top of the central  
horn in 6-11

(+ 5-) and a few  
among the detachable spines (+ 6)

546 cont

546 VII still 2 headed Aug 24 A.M.  
ad legs 1 2 alone on 12 and above  
1 on 13 also at base and coming between  
the horns 1 on 12 and 13 on account of  
their position a shape of larva often  
would have something more like  
spunula a written.

Mo III Aug 24 about 10 A.M. Ant  
edge 2 with many setae also  
before spinules. C. sh. as ordinary  
one with a few spinules on  
its anterior border, square behind  
the ant corners cut off, 2 mm wide.  
Hd closed 3.0 mm. Pale greenish,  
eye black just below, and 3-jointed  
long tipped by a hair. a fold

runs through 2 oblique brown  
and corner of 6th back above  
spiracles. Lateral palps small  
with a little fringed lobe on  
inner side. Tars have S-V (IV+V)  
on every joint 3-13 and on 2.

The feet small, clypeus with a  
brown curved band. Several setae  
on surmole & paracymbia. Setae S-V.  
The latter not different from the 2  
which I call IV + V (2) represented  
by tiny spines on 6-10 as before.

Length 16 horn ① 2.8 mm

Body colored in general as before  
but S-V is brownish purple and  
the color surrounds sd spots on

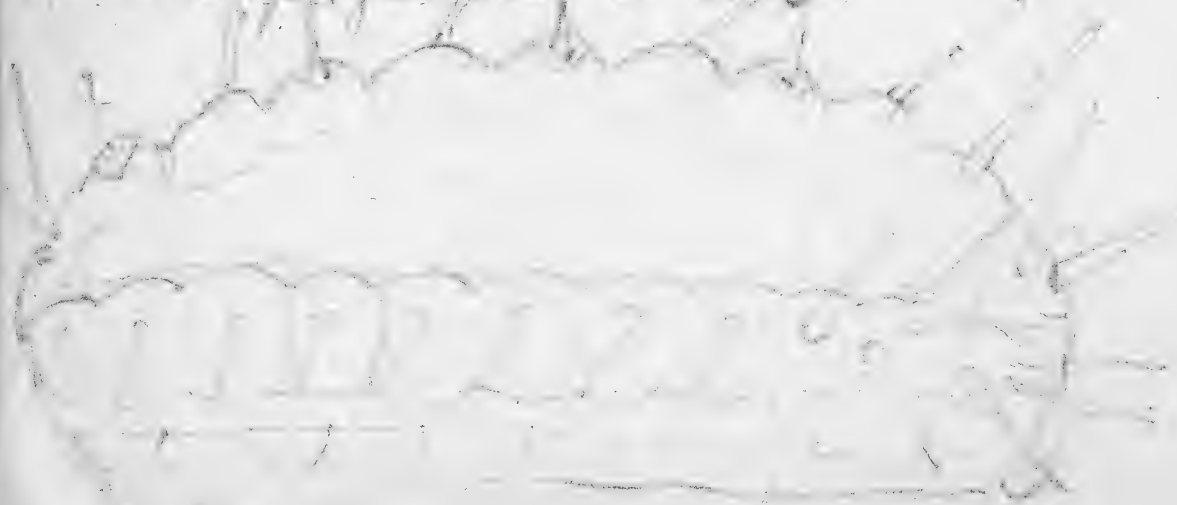
11-12 hence ground color is purple  
as stated in 249. Horn ① purple  
all shorter than before ② "  
3-4 pale brown 6-13. At base  
of ② 12 above & at base of ① 13  
above (but ① 13 lies in lat. line)  
an elliptical area .8 x 1.5 mm  
covered with closely set brown spin  
of a dark velvety brown. These  
spines have a pale yellowish  
~~shaft~~ and brown flange tip  
and are close set, parallel and  
touching, enclosing the rows.  
divided into 2 or 3 groups, more  
narrowly arranged.  
Color more purple than before





Calc. : 28 .39 .54 .75 1.04 1.44 2.0 set .72  
 Found .3 .45\* .6\* .8 1.0 1.4 2.0  
 \*from alcohol I make these .4- and .5 feet they are very small.  
 547 = 210

Larva of *Apoda pinnata* from Min. Norton  
 in stage I probably. Rounded elliptical, the  
 dorsal region pointed, consisting  
 of secondary tubercular elevation, causing  
 the dorsal area to form a furrow and the lateral  
 to be concave, ends square, subtruncate,  
 skin perfectly smooth, shiny, no granules  
 very hard. It is represented by a series of  
 large secondary spines, on abd. alter-  
 nately bearing in and out but their bases  
 not expanded. The spines have a small  
 knob like projection about the middle  
 and can be traced deep into the skin.  
 Larva fat, wings pinched shut shorter &  
 with a projection in line.



Whitish, d. green green from food, 5th spine  
 dark, blackish, the rest pale. Length  
 1.5 mm. w. lat. 3 mm brown black all over  
 4th & 5th with 3. 8d ridge looks whitish  
 (not as thick) 5th ridge looks whitish  
 small clear granules which bear short  
 setae; also some short setae from the tubercles  
 17th which consist of 2 setae the whole length  
 of 2d ridge; lateral tubercles with one long  
 and many short setae. Lateral ridge not  
 beyond 5th ridge which bears 2 setae long.  
 A series of ill defined depressed areas, a  
 large d. and alternating with 2 small (eq?)  
 the tubercles on the rounded lateral sides  
 a single row of lateral impressed areas, the  
 space of tubercles (with setae) runs along from  
 S-V finely granular, not setiform. 9 has a  
 lateral 10 seta exactly as figured, from which  
 larva now differs only in having 2 setae whole  
 length of 1st ridge instead of 1 or 3 and 13. 13 has  
 a long lat seta, but 14 has a rowing layer  
 from the secondary one. 16 lat seta is









Acronycta on yellowish-brown. July Highland 5th  
 July 9/1895 Hd 2.51. 4000 ft. white sp  
 cephalon & faintly dotted on face, apex  
 of lobes pale brown. deep green, a yellowish brown  
 d line enlarged to a patch on 7 & 12 and  
 brown centered, minute brown d. dots 8-11  
 very small i-11 yellow, the rest greenish  
 on 3-8 a cord line instead of d. Hair very  
 few dark d. spots 5-8 with a few slender  
 lines 2<sup>d</sup> over there. Feet green.

Molt July 16 Hd 3.71 (Shld 2.4) Hd green below  
 passing above into a whitish ground;  
 branches of lobes orange for a short space  
 then begin with sharp edge & series of  
 yellow blackles comprised of little cylindrical  
 knobs. Smaller below and end a pale red





*Acronycta* or *Myiophila*, 1st inst July 29. Shaded green, with yellow  
ad yellow line faint broken, trace of sd on thorax, all light  
yellow. D. on 5, 8, 9, 11 faint 12 somewhat brown patches rounded  
with yellow especially at sides. To have long dark, 10 even  
9 shorter hairs. 5 & 12 slightly enlarged d. Hd. 1.35  
Molt Aug 30 Hd green, prothoracic shield over lobes, apex pale  
brown. Red green warts ad line yellow, yellow elliptical  
patch i-ii on 5, 8, 9, 12 with red center; a red dot on 11  
no sd line, a trace on 3-4. Hd. 2.2 Skin granular sparse  
with short pale & a few long ad hairs. Hairs sparse only  
a few fine. warts (Aug) 5 & 8 a little enlarged d, brown dots on  
yellow d line on 4, 6, 7 small, 8, 9 larger, 10, 11 smaller. d line  
enlarged to enclose i on 8 & 9, ii on 5 and 12. Red green, warts  
small yellow, d. line 4-12 trace of sd on 2-3 (probably = 549)  
Molt Aug 6 Hd pale, black mottles, apex orange; Body otherwise  
i ii black, rest pale, a pale d line, 5 & 12 a little yellow  
mottled. Hair short coarse, pale & some abundant 5-8  
= reticular Empty 8d Aug 12 P M



T



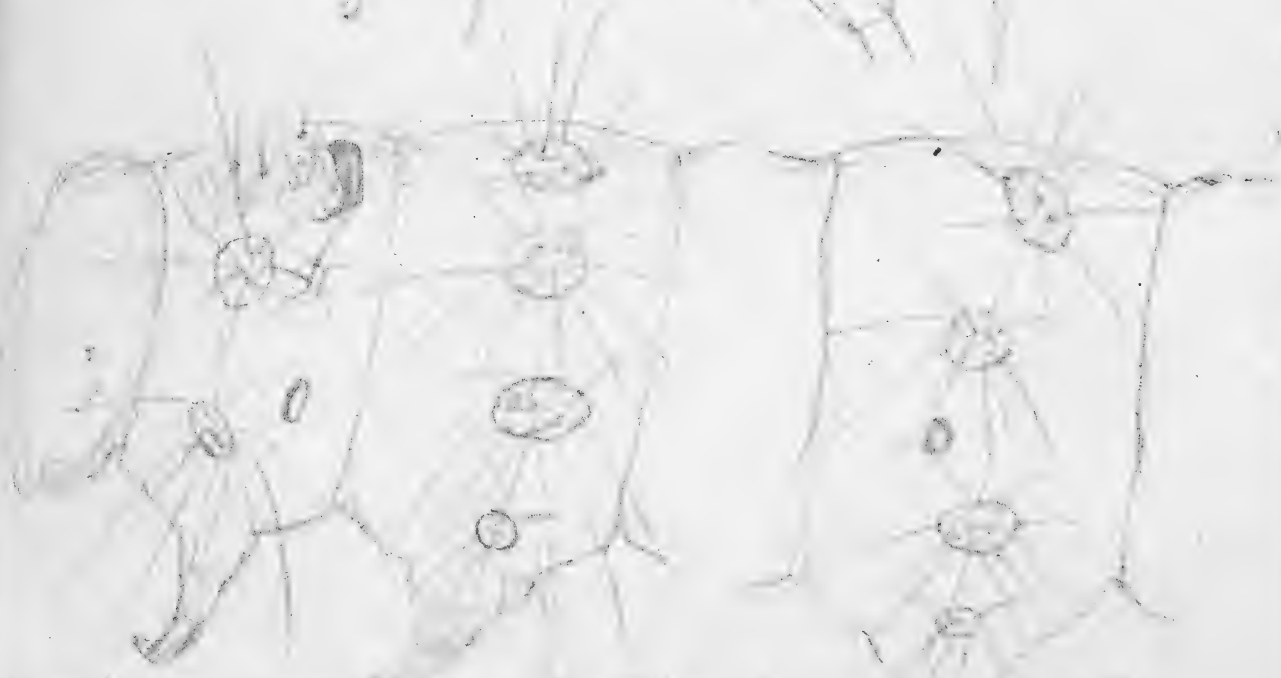
528

Canis of bold crucifera from 7.4  
Chapman of type I

Spine of wood, or 2.0  
all equally developed



384



Native, from Mr. E. Le Boniguet, Paris

549

Eggs of *Lepidoptera* from *Trichoptera* from  
in. Sells pupae. Elliptical, elongate, flattened  
above and below,  $1.2 \times .5 \times .5$ , light yellow  
slightly shiny. Surface smooth with small  
very slight punctures. Spines thin,  
scaly, unbranched. All green, white and yellow.

Hatched July 29. Golden yellow, light yellow, white.



light yellow  
white hair  
with small  
from mouth, rest

is on mouth. Apparently 1st instar. 2. Hair long,  
fine, very spinulose, faintly curved, white  
slightly sticky. Spines on 1. Mouth apparently  
as mature larva. Processible. Spinulose  
evident, no head on it. (Sketch rough) July 18<sup>30</sup>

Superior pupa. 1st instar. 2. Hair long,  
fine, very spinulose, faintly curved, white  
slightly sticky. Spines on 1. Mouth apparently  
as mature larva. Processible. Spinulose  
evident, no head on it. (Sketch rough) July 18<sup>30</sup>

Hatched Aug 3. Hair long, fine, very spinulose, faintly curved, white  
slightly sticky. Spines on 1. Mouth apparently  
as mature larva. Processible. Spinulose  
evident, no head on it. (Sketch rough) July 18<sup>30</sup>

Molt Aug 3. Hair long, fine, very spinulose, faintly curved, white  
slightly sticky. Spines on 1. Mouth apparently  
as mature larva. Processible. Spinulose  
evident, no head on it. (Sketch rough) July 18<sup>30</sup>

with a few small white spots on the body.

Body, mouth, white. Hair long, fine, very spinulose, faintly curved, white  
slightly sticky. Spines on 1. Mouth apparently  
as mature larva. Processible. Spinulose  
evident, no head on it. (Sketch rough) July 18<sup>30</sup>

Molt Aug 12. The long white hair covering all  
around. Body immaculate as before. A  
few short black tipped spines from 1. There are  
a few fine short hairs from 5-8 region. 1st

instar. 2. Hair long, fine, very spinulose, faintly curved, white  
slightly sticky. Spines on 1. Mouth apparently  
as mature larva. Processible. Spinulose  
evident, no head on it. (Sketch rough) July 18<sup>30</sup>

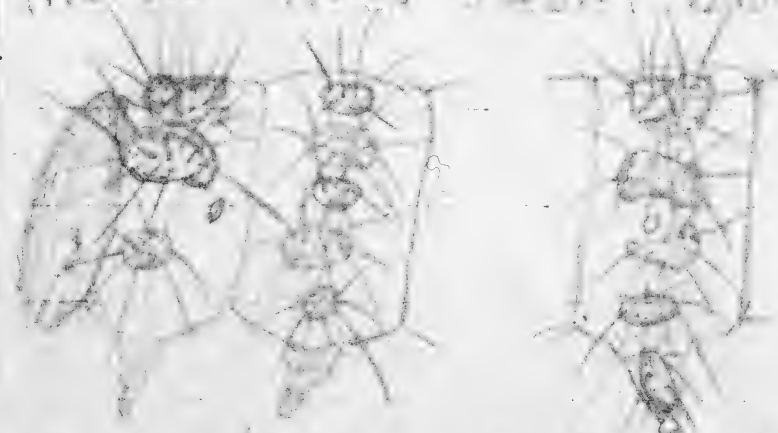
Molt Aug 29. Hd 1.3 ± Body slightly yellowish, white  
hair long, fine, very spinulose, faintly curved, white  
slightly sticky. Spines on 1. Mouth apparently  
as mature larva. Processible. Spinulose  
evident, no head on it. (Sketch rough) July 18<sup>30</sup>

Molt Sept 4. Hd 2 ± Same. Length 12-13 mm.  
Molt Sept 11. Last stage, hair dark gray  
1st and 2nd light reddish brown, 3rd 4th



base. Body all white; spines black  
 opercula distinct. In the maxilla  
 laterally is a sort of gland like thing  
 a space folded around by the segments  
 (see Hymen leucis) Sept 12 18 mm  
 Spun Sept 23

(Cat. no. 17592) <sup>531</sup> *plagiata*  
 Egg of *Sarcophaga leucophaea* = 486 = 36 yellow  
 Hyblans, N.H. laid July 6-7. Cylindrical  
 spherical flattened above and hollowed  
 in a cup shape at micropyle. White with  
 a greenish tinge at first which disappears  
 a dark shade in hollow. W. 8 height 6  
 Reticulated from the edges of round,  
 shallow depressions, irregularly all defined  
 diffuse & roundedly hexagonal. At micropyle  
 a single row of narrow prismatic wedge  
 shaped cells. Laid in patches of few & 25  
 stuck by a clear gummy forth which fills  
 up interstices between eggs near to the top  
 atched July 21 whitish at first like *Arch. hyalina*  
 Hd. and roots black. Body corded whitish



Hair abundant  
 all single, arising  
 from a short pedicel  
 but rather long  
 dark & light mixed. W. 4 ± sd on 2 large.  
 Aug 12 1 mm smaller, large ones on 5-8

Lateral white patch 1 on 4 and 9.

Molt July 30 Hd black, body gray, not white. Present, white. Dorsal hairy esp. late. where the hair are long & white forming a dense halo around larva. Surface visible d. a few short plumed dark gray hair sd on 2 d on 5, 6 & 12; 3-4 & 9 white d esp. 9 which has a large white spot on ii & iii. Vent otherwise gray. Hair fine & included the long lateral one feathers. A few very long simple black hair feet.

Molt Aug 6-7 Hd shiny black. 5-7, 12 black tufted, hair long thick. white, with a series of single plumed black lateral hairs varying in distribution in different larvae, in some very evident. Long slender pencil sd on 2. Body black, other hairs gray, some of the d ones plumed, when white appearing 'brownish'. Red tubercles faintly reddish. A lot white line, black tufts 5-6 black, no more or less.

ones on 7-8 gray, or only on 7. (= 486 g.v.) White sd distinct 9-10, base of lat, s-v more white on 11. Red tub. red. The majority are without the plumed side tufts.

Molt Aug 13 Pencil 5-10 behind, plumed hair on the side distinct; 3 black tuft and no on 12; red tub. red. Side plumes from (5), 2 on joints 4-8, one from the rest none from (3) (in this example). Tufts 5-6 black 7 partly black, 8 no tuft mostly mainly white. Distribution as in 486 IV g.v. Side plumes vary, not the same on two sides of same larva.

One had plumes on 5-8. Another only a single plumed hair from III on 5, none from V (in previous stage none at all).

Molt Aug 25 Head black, body black, a point s-v white line. Pencil on 2 & slight on 13 with tufts 4-6 black. 6 may be partly white, white tufts 7-8 and 11 whole length mostly white, 10 short with white, v-vi long dense feathers white but not 'mouldy'. Squares tuft 12 black - a hair in space around reddish red tub. None on a whole row of black plume hair on sides Hyb.



Antennae with antennal-like tubules on  
 broad calli to I, yellow. H. heads, July 28 1895.  
 Processes in 3 rows (no dorsal) and some  
 white with black hairs. A single long  
 1st pair in 2, flexible, white at base  
 the rest black, hairy, a little club-shaped  
 on process on head, only the 5th pair in 2  
 and only 2 rows in 3-4. Body, double  
 purplish with a series of 2nd colored black  
 blotches, a narrow white ss line along  
 D. Spun between July 28 & 29

Images Aug. 9 1895

Agyneta rufipes

near J. style on upper side of maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.

553

180 2nd style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 1st style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 2nd style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 3rd style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 4th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 5th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 6th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 7th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 8th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 9th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 10th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 11th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 12th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 13th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 14th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 15th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 16th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 17th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 18th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 19th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.  
 20th style on maple leaf  
 H. Highlands July 27 1895. 4th style  
 color whitish mottled with brown dots.

Little *Uptalae* on sample (Belgians)  
 28 July 1946

Hd. .87 d on under side, pinkish  
 red above. Body pale yellowish  
 more opaque (dotted); not as coarse  
 as (small) spider. 2-8 vent  
 small, knob-like, 1-11 large  
 pale yellow, 12-15 small  
 greenish, 16-17 long, coarse, whit  
 brown on d. part blackish.  
 segs all of greenish, being  
 somewhat streaked toward  
 a darker whitish d. line

[Hd 1.0 (red streaking/darker vent.)  
 seg 1-10 Hd 2.6] 463

Seg 28	45	.67	1.1	1.76	2.8
Head	4	.7	1.2	1.8	2.8

Hd 4 tilted.  From white to  
 brown, very coarse, 1-11  
 small, knob-like, 1-11 large  
 pale yellow, 12-15 small  
 greenish, 16-17 long, coarse, whit  
 brown on d. part blackish.



[illegible]

at 1.2. Mistle, a very common plant  
found in all marshes. It is a very  
small, round, white, or yellowish, 1-2  
inches high, with a brown, scaly  
underside. It is very common in the  
marshes.

Head with antenna-like tubercles on  
 broad walk to J, yellow Highlands, July 28 1895.  
 Processes in 3 rows (no dorsal). Head same  
 white with black hairs. A single long  
 sd fan on 2, flexible, white at base  
 the rest black, hairy, a little club-shaped  
 on process on head, on the sd fan on 2  
 and only 2 rows on 3-4. Body dull  
 purplish with a series of sd & lat black  
 blotches, a narrow white ss line along

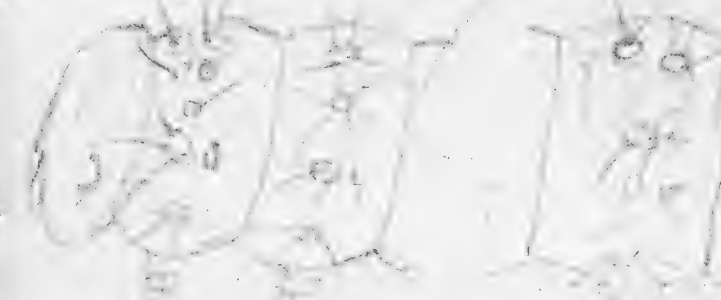
(3) Spun button July 28

Aug. 9 1895

*Lepidoptera myrmica*

July 28 1895  
 361 X

Larva T. style on upper side of maple leaf  
 off Highlands July 27 1895. T. style  
 bilobed whitish mottled with brown dots.  
 w 38 mm. Body whitish with 4 wine red transverse  
 stripes per seg. iii-iii, distinct between ii & iii  
 faint dorsally. (Warts 1-iii pale ring, the rest  
 whitish annular with body. Wart ii smaller  
 than i, ix & x small, with 3-10 hairs. Hairs  
 rather long pale except from i-iii where they  
 are shorter and dark. No secondaries. Spun  
 on 3-4 as in *Ant. 2*. The *Ant. 2* is con-  
 verted into a rounded spot



turned into a  
 rounded spot

Molt July 28 Same Hd 2.5 The 2nd bands  
 running from i to x are black cut  
 by 1 or 2 little white patches, crimson at  
 the ends. In d. space a round sd spot  
 black point, edged with crimson. 3rd band  
 faintly continued cl, crimson but a few  
 fainter than the 2nd central ones but cold



the same, faint brown shading into black  
 red hair I, II short bristly orange, III-IV  
 long white. Body yellowish brown, white  
 white I-III pale orange, rest annular  
 no 2 hair. Skin points minute, rather  
 sparse a little longer in round rd of spots  
 later brown hair & dark shade contrast  
 yellowish 2-4.

From Aug 7 a corner of charred up leaves  
 and little like *Sp. lutea* oblong etc  
 Oct May 21 1897 *A. desmunda* Cal No 12750

all  
 I 1.2-1.7  
 II 1.7-2.4  
 III 2.4-3.5  
 IV 3.5-4.9  
 V 4.9-7.7  
 VI 7.7-11  
 VII 11-15.5  
 554 = 244 = 4

one scapha from Wain Winton, recd July 29 1891  
 (shell) white, a upper surface of leaf. Elliptical  
 white flat 1.8 x 1.2 in skin over thin white

and line. Scapha egg from Doll house  
 March 21, hatching July 18 1896

in surface. Broadly elliptical flat  
 1.7 x 1.4 x .1 mm

Type Hd. 3. Rotund later rather dist.

Grand @ showing a small granular

outer part. Textures broader lower

Color as above, recent

manifest with a change

from yellow to white

and a little dark brown

below.

July 23 + pale egg white

of small up hill top

hatching June 21st

thick and full straight

July 23

the angular lower

of angular

the tubercles 2 lines

spine below corner

cannot see shell

Scapulae eggs from Doll  
hatching Nov 14 1896  
Broadly elliptical, flat  
at ends, 1.4 x .8 mm  
Color like mother's but  
very a greenish green  
Texture smooth, less  
color, dorsal, yellow  
translucent, with a slight  
greenish tinge, dorsal  
very slightly translucent  
a small, dark head, brown  
to black.  
All 1896 eggs were hatched  
on November 14, before  
hatching the 1896 eggs  
were a little stronger.



Still in the field  
 Hatched before the 1st of June.

<del>1st</del>	<del>1st</del>	Stem of
<del>2nd</del>	<del>2nd</del>	Stem of
<del>3rd</del>	<del>3rd</del>	Stem of
<del>4th</del>	<del>4th</del>	Stem of
<del>5th</del>	<del>5th</del>	Stem of
<del>6th</del>	<del>6th</del>	Stem of
<del>7th</del>	<del>7th</del>	Stem of
<del>8th</del>	<del>8th</del>	Stem of
<del>9th</del>	<del>9th</del>	Stem of
<del>10th</del>	<del>10th</del>	Stem of
<del>11th</del>	<del>11th</del>	Stem of
<del>12th</del>	<del>12th</del>	Stem of
<del>13th</del>	<del>13th</del>	Stem of
<del>14th</del>	<del>14th</del>	Stem of
<del>15th</del>	<del>15th</del>	Stem of
<del>16th</del>	<del>16th</del>	Stem of
<del>17th</del>	<del>17th</del>	Stem of
<del>18th</del>	<del>18th</del>	Stem of
<del>19th</del>	<del>19th</del>	Stem of
<del>20th</del>	<del>20th</del>	Stem of
<del>21st</del>	<del>21st</del>	Stem of
<del>22nd</del>	<del>22nd</del>	Stem of
<del>23rd</del>	<del>23rd</del>	Stem of
<del>24th</del>	<del>24th</del>	Stem of
<del>25th</del>	<del>25th</del>	Stem of
<del>26th</del>	<del>26th</del>	Stem of
<del>27th</del>	<del>27th</del>	Stem of
<del>28th</del>	<del>28th</del>	Stem of
<del>29th</del>	<del>29th</del>	Stem of
<del>30th</del>	<del>30th</del>	Stem of
<del>31st</del>	<del>31st</del>	Stem of
<del>32nd</del>	<del>32nd</del>	Stem of
<del>33rd</del>	<del>33rd</del>	Stem of
<del>34th</del>	<del>34th</del>	Stem of
<del>35th</del>	<del>35th</del>	Stem of
<del>36th</del>	<del>36th</del>	Stem of
<del>37th</del>	<del>37th</del>	Stem of
<del>38th</del>	<del>38th</del>	Stem of
<del>39th</del>	<del>39th</del>	Stem of
<del>40th</del>	<del>40th</del>	Stem of
<del>41st</del>	<del>41st</del>	Stem of
<del>42nd</del>	<del>42nd</del>	Stem of
<del>43rd</del>	<del>43rd</del>	Stem of
<del>44th</del>	<del>44th</del>	Stem of
<del>45th</del>	<del>45th</del>	Stem of
<del>46th</del>	<del>46th</del>	Stem of
<del>47th</del>	<del>47th</del>	Stem of
<del>48th</del>	<del>48th</del>	Stem of
<del>49th</del>	<del>49th</del>	Stem of
<del>50th</del>	<del>50th</del>	Stem of
<del>51st</del>	<del>51st</del>	Stem of
<del>52nd</del>	<del>52nd</del>	Stem of
<del>53rd</del>	<del>53rd</del>	Stem of
<del>54th</del>	<del>54th</del>	Stem of
<del>55th</del>	<del>55th</del>	Stem of
<del>56th</del>	<del>56th</del>	Stem of
<del>57th</del>	<del>57th</del>	Stem of
<del>58th</del>	<del>58th</del>	Stem of
<del>59th</del>	<del>59th</del>	Stem of
<del>60th</del>	<del>60th</del>	Stem of
<del>61st</del>	<del>61st</del>	Stem of
<del>62nd</del>	<del>62nd</del>	Stem of
<del>63rd</del>	<del>63rd</del>	Stem of
<del>64th</del>	<del>64th</del>	Stem of
<del>65th</del>	<del>65th</del>	Stem of
<del>66th</del>	<del>66th</del>	Stem of
<del>67th</del>	<del>67th</del>	Stem of
<del>68th</del>	<del>68th</del>	Stem of
<del>69th</del>	<del>69th</del>	Stem of
<del>70th</del>	<del>70th</del>	Stem of
<del>71st</del>	<del>71st</del>	Stem of
<del>72nd</del>	<del>72nd</del>	Stem of
<del>73rd</del>	<del>73rd</del>	Stem of
<del>74th</del>	<del>74th</del>	Stem of
<del>75th</del>	<del>75th</del>	Stem of
<del>76th</del>	<del>76th</del>	Stem of
<del>77th</del>	<del>77th</del>	Stem of
<del>78th</del>	<del>78th</del>	Stem of
<del>79th</del>	<del>79th</del>	Stem of
<del>80th</del>	<del>80th</del>	Stem of
<del>81st</del>	<del>81st</del>	Stem of
<del>82nd</del>	<del>82nd</del>	Stem of
<del>83rd</del>	<del>83rd</del>	Stem of
<del>84th</del>	<del>84th</del>	Stem of
<del>85th</del>	<del>85th</del>	Stem of
<del>86th</del>	<del>86th</del>	Stem of
<del>87th</del>	<del>87th</del>	Stem of
<del>88th</del>	<del>88th</del>	Stem of
<del>89th</del>	<del>89th</del>	Stem of
<del>90th</del>	<del>90th</del>	Stem of
<del>91st</del>	<del>91st</del>	Stem of
<del>92nd</del>	<del>92nd</del>	Stem of
<del>93rd</del>	<del>93rd</del>	Stem of
<del>94th</del>	<del>94th</del>	Stem of
<del>95th</del>	<del>95th</del>	Stem of
<del>96th</del>	<del>96th</del>	Stem of
<del>97th</del>	<del>97th</del>	Stem of
<del>98th</del>	<del>98th</del>	Stem of
<del>99th</del>	<del>99th</del>	Stem of
<del>100th</del>	<del>100th</del>	Stem of



Later perhaps in a dense  
 forest. In the early part of  
 the season, but not in the  
 latter part.

the same, faint brown streaking into back  
 red. Hair i, ii short bristly orange, iii-vi  
 long white. Body yellowish waxen or like  
 white i-iii pale orange, rest cinnamon  
 No 2 hairs. Skin points minute to rather  
 of size a little longer in round end of spots  
 later brown base of dark shade center  
 yellowish to v.

from Aug 7 a cocoon of chewed up leaves  
 and silk like *Spartula obliquata* etc  
 Oct May 21 1897 *A. dissimilis* Cat no 12750

Calc  
 I 1.2-1.7  
 II 1.7-2.4  
 III 2.4-3.5  
 IV 3.5-4.9

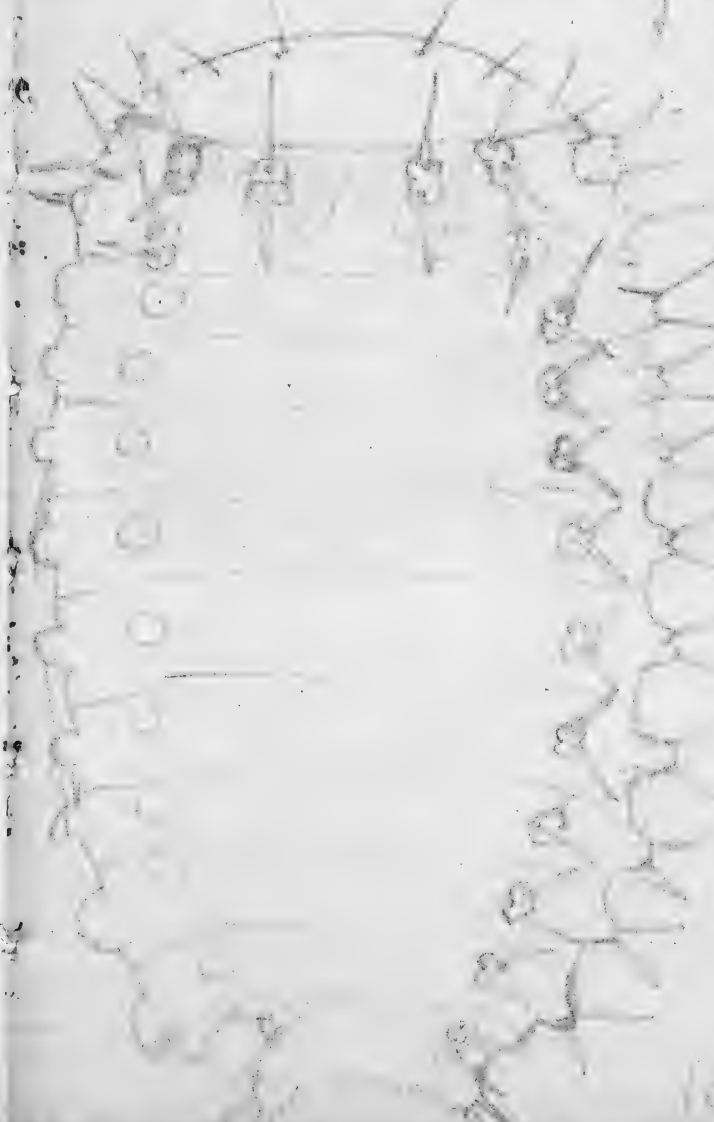
V 4.4-7.7  
 VI 7.7-11  
 VII 11-15.5

$$554 = 244 = 4$$

True scapha from Wain Winton, recd July 29 1891  
 Egg (shells) probably on upper surface of leaf. Egg oval  
 quite flat, 1.8 x 1.2 the skin very thin, white  
 and lustrous. Petiole lobes rounded, obscure  
 scarcely apparent of each other, or more than angles  
 the surface a little shagreened, as usual  
 Stage Hd. 3 length 1 mm. (head & neck shown here)

① and ② each large bifid (as in first all the same) with 2 st  
 setae. Proson broad & flat. Skin perfect smooth

on hollowed a little  
 of the ridges, approx  
 yellowish white with  
 an irregular brown  
 band along each  
 sd ridge. Ridges  
 not distinguishable  
 the angles have  
 a singular  
 the tubercles. 2 light  
 spines below arms  
 (could not see whether





These are the  
tubercles of the spine.

(50% alcohol)

384 are chief differences and 13 is divided into  
2 segs, or all time 5 tubercles are in 3, 4 like  
5 and 13 has no more tubercles than other segs.  
Lateral space very narrow at least in distal seg.

**II** <sup>seg 1 and 2, 2 seg 3, 4 seg 4, 5 seg 5, 6 seg 6, 7 seg 7, 8 seg 8, 9 seg 9, 10 seg 10, 11 seg 11, 12 seg 12, 13 seg 13</sup>  
Shape as before. Lateral  
space great  
about 10 and 10  
greenish with  
same ridge, the whole side area


composed of elongated s-v. convergent but the  
ridge (s-d) with broad d: e side spaces.  
2 rows of double setae on tubercle from the ridge  
with additional ones at the ends. Tubercle  
and setae smaller in proportion than before  
but similar. Roef all white, printed more  
behind than before, 2 flat, a little curved  
side very 1: 1. insect almost square quadrate  
in longitudinal aspect, d a little narrower.  
Dorsal yellowish a broad dark band along upper  
side of ridge, continued at ends and also  
a bar on center of body. 8 skin smooth  
appears in purple hollow, d. intersg and add  
seg. and on segs. Paces of tubercle wrinkled  
subparallel. Lateral (s-v) skin also  
wrinkled with 2 rows of faint depression on the  
upper off center of the intersegmental rows.

[\*] aspect, above upper ridge; lat aspect below  
lower part of ridge but when seen from side  
evident well below the ridge, seen by transp.  
center more clear yellow than body. No

**III** <sup>seg 1 and 2, 2 seg 3, 4 seg 4, 5 seg 5, 6 seg 6, 7 seg 7, 8 seg 8, 9 seg 9, 10 seg 10, 11 seg 11, 12 seg 12, 13 seg 13</sup>  
hd. 5 length 2.4 mm change to another  
structure. Tubercles absent, a single trans  
side represent each 1st ridge

prominent. Dorsum hollowed, sides 1. Skin  
obscure granular or reticulate. The markings  
scarcely elevated\* depressed areas irregular  
sculptured, chevron creased, square the dorsal  
elongate hexagonal (trans) large, ad-d. small  
rounded, the lateral ridge is very narrow,  
almost linear. Areas not much depressed  
Sides hollowed below the round bulging ridge  
which shows a seg row of round clear areas  
on lower aspect. Slightly granular, without  
well defined areolae, some hexagonal  
areas just indicated. Color greenish the ridge  
broad brown with chevron. Head as before  
at the highest part of dorsum (on a trans.  
lateral ridge). The body is a little angled at  
seg joint in the transverse lower part highest the  
(Echin. Jul 31. 3 rows, 2 steps 15, 1 joint dist, shiny steel smooth, 1 step 2 seg)  
Aug 3 dorsal large segment with brown. Length 2.7 mm. other 2.4 mm.  
except on the plate 3.4. Do not know where the trans band is.  
Aug 4 to me 3 mm, same still 4 seg; other are 2.7 seg.  
Aug 5 other are shaded a brown, a dorsal part a little yellow  
on the plate. Length 2.5 mm. Ridge the chevron  
3 mm and 2.7 mm. 7 seg granular are flat with some  
continuity, not really in segs but somewhat  
smaller spaces of yellow brown a little distal  
side narrower about, upper pentagonal, clear  
ridge, lower smaller, a little part rounded and  
rather smooth. Spines very obscure, alternating  
with tops of the lower row.

**IV** seg 11, 12 must have shed 1 color like, length 3.1 mm  
very much as before but the depression areas of 11 and 12  
are depressed. They are not continuous, still a  
narrow band depressed irregularly depressed  
narrow lateral ridges and off center of the ridge  
bulging rounded s-d ridge distal and medial. The  
dorsal plate has a faint chevron on  
by a central line and 2 parallel rows of  
line. The dorsal area really on a seg, it



2. *S. latirostris*

Stage I	Stage II	Stage III
Step 1: <u>Sample</u>	Step 2	Step 3
Stage IV	Stage V	Stage VI

*[Faint handwritten text]*

Aug 21 AM. - 1st year. - white eye-blade, from above and  
 from black bands, palpi pale; w. 12 mm. In the  
 head the base of ridge (a) shows  
 again. I do not see them  
 in the larva. All same.



Specimen Sept 10. Last stage somewhat larger and  
differentiated character from the preceding.  
Mes. greatest length of can. 4 15.1 mm.

1 *Monarda*  
 2 *Spargelia*  
 3 *Spargelia*  
 4 *Spargelia*  
 5 *Spargelia*  
 6 *Spargelia*  
 7 *Spargelia*  
 8 *Spargelia*  
 9 *Spargelia*  
 10 *Spargelia*  
 11 *Spargelia*  
 12 *Spargelia*  
 13 *Spargelia*  
 14 *Spargelia*  
 15 *Spargelia*  
 16 *Spargelia*  
 17 *Spargelia*  
 18 *Spargelia*  
 19 *Spargelia*  
 20 *Spargelia*  
 21 *Spargelia*  
 22 *Spargelia*  
 23 *Spargelia*  
 24 *Spargelia*  
 25 *Spargelia*  
 26 *Spargelia*  
 27 *Spargelia*  
 28 *Spargelia*  
 29 *Spargelia*  
 30 *Spargelia*  
 31 *Spargelia*  
 32 *Spargelia*  
 33 *Spargelia*  
 34 *Spargelia*  
 35 *Spargelia*  
 36 *Spargelia*  
 37 *Spargelia*  
 38 *Spargelia*  
 39 *Spargelia*  
 40 *Spargelia*  
 41 *Spargelia*  
 42 *Spargelia*  
 43 *Spargelia*  
 44 *Spargelia*  
 45 *Spargelia*  
 46 *Spargelia*  
 47 *Spargelia*  
 48 *Spargelia*  
 49 *Spargelia*  
 50 *Spargelia*  
 51 *Spargelia*  
 52 *Spargelia*  
 53 *Spargelia*  
 54 *Spargelia*  
 55 *Spargelia*  
 56 *Spargelia*  
 57 *Spargelia*  
 58 *Spargelia*  
 59 *Spargelia*  
 60 *Spargelia*  
 61 *Spargelia*  
 62 *Spargelia*  
 63 *Spargelia*  
 64 *Spargelia*  
 65 *Spargelia*  
 66 *Spargelia*  
 67 *Spargelia*  
 68 *Spargelia*  
 69 *Spargelia*  
 70 *Spargelia*  
 71 *Spargelia*  
 72 *Spargelia*  
 73 *Spargelia*  
 74 *Spargelia*  
 75 *Spargelia*  
 76 *Spargelia*  
 77 *Spargelia*  
 78 *Spargelia*  
 79 *Spargelia*  
 80 *Spargelia*  
 81 *Spargelia*  
 82 *Spargelia*  
 83 *Spargelia*  
 84 *Spargelia*  
 85 *Spargelia*  
 86 *Spargelia*  
 87 *Spargelia*  
 88 *Spargelia*  
 89 *Spargelia*  
 90 *Spargelia*  
 91 *Spargelia*  
 92 *Spargelia*  
 93 *Spargelia*  
 94 *Spargelia*  
 95 *Spargelia*  
 96 *Spargelia*  
 97 *Spargelia*  
 98 *Spargelia*  
 99 *Spargelia*  
 100 *Spargelia*

561A? Fiery Elliottia  
Mariana

July 5 1896 Ht. 4 pal III?  
although eye black narrow

- July 5 2.3 with horn. All green  
" 6 2.7 " pale whitish with  
" 7 3.5 " a faint yellowish  
" 8 3.3 to shed off green from food  
" 9 3.0 " ① 3.5 8 11-12 alike  
" 10 3.9 eating over large with many  
" 11 4.5 " black spine; 11 small  
" 12 5.5 " others very small with  
" 13 5.3 to shed pale spine. ② dark all  
" 14 5.5 eating almost all the with pale  
" 15 7.5 " spine. Later dark  
" 16 8.0 " brown faintly yellowish  
" 17 7.5 to shed spine to 5 up mid of line.  
" 18 " " prolegs very black  
" 19 " " Stage IV 9 prolegs black  
" 20 7.8 to shed 10 long dark spine.  
" 21 9 eating Code colorless whitish.  
" 22 10 " Ht. 5 by black mouth brown  
" 23 9.5 still spine fine & 1 on side  
" 24 " to shed 10 long prolegs. July 10  
" 25 " " not the long horns pretty  
" 26 " " crimson tinted. Body green  
" 27 9.5 shed green food, golden pale & line



Segments very distinct. D.  
 add. depression small, no  
 perceptible center. 2 interseg  
 lent. whitish dots like Eides  
 found whitish sd line indi-  
 cated at base of long horned  
 Hd 5± whitish, eye black mouth brown  
Styl 14 same, the posterior line  
 along ridge and red like the long  
 horns. Spine long, black. Whitish  
 line near continuous. Pair white  
 seg. pale glandular dots. Also a  
 lateral row. Skin rather closely  
 watery granular, the granules irregular  
 some. A few collected on top of the  
 side horns esp. anterior. Hd 7±  
 segs. D. 1/2 of lat filled in  
 with dull solid green. 2 faint curved white  
 line, one rings around the glandular dot  
 on the side. These line later de. some  
 upper edges of dark green obscure space  
 below ① and also ② top. white line  
 ②. some whitish irregular patches  
 around glandular dots. d. sp.  
 defining these dark brown irregular spots  
 sd line and also ②. 2767  
Styl 11 ② same, red. 8. green dark space  
 showing into blackish. glandular dots  
Styl 12 a rusty color, glandular dots  
 plain spots white. 2767  
 skin shows confluent spotted blackish  
 brown. 2767  
 2767 - 2767 - 2767 -

Case 1.5-  
 521-1-3  
 4.3  
 6

Date	Age	Weight	Notes
July 27	9.5	under	VIII July 27 56/A cont.
" 28	9.6	"	
" 29	11	eating	Large caltropes @
" 30	10.5	"	6-12, some @ 13.
" 31	11	"	Salmon greenish,
Aug 1	"	"	black line heavy
" 2	11	tested	complement bordered
" 3	"	"	with <sup>salmon</sup> whitish, d
" 4	10	by side	line whitish
" 5	12	eating	"
" 6	12	"	① and both horns
" 8	14	"	"
" 9	13.5	shot	dull terra cotta

" 12 14 eating red, ① narrowed  
 (part of red) at 4-5, 6-7, 9-10  
 and 11-12 but not  
 broken through, the spots black  
 as part of the s-d dark line  
 slender dots white, evident.  
 No end spines.

Shed Aug 8 Terra cotta, green  
 purplish, lines distinct  
 ① in row 6 lines coming  
 continuous. Caltropes @ 6-12  
 and ① 13. No end spines

Shed Aug 11 One pair end spine  
 very red. elliottii form.



561

<sup>x another a distinct d. line, depending space</sup>  
trans. narrow. A distinct lateral one, including both  
last inters. & inner edge of inters. No ocellus.

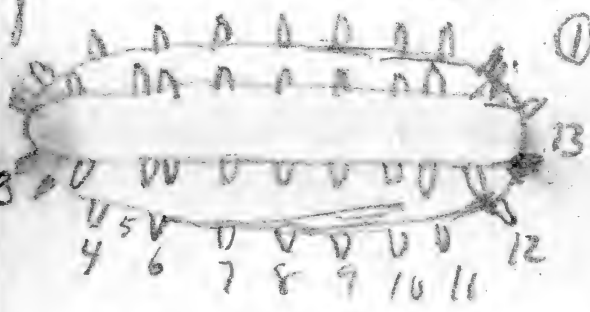
On Myrica cerifera Long Island City with Rev.

Bentzenmiller Aug. 30 1895. Very red ones.

D. sp. moderately broad even, scarcely narrowing at  
ends, lateral space rather wide, oblique  
S-V space narrow, contracted. Tubercles = short  
horns, unequally developed but not markedly  
① about as long as ② on average, in ③ 3, 4, 5-  
11, 12 about twice as long as 6, 7, 9, 10; 8 and  
13 intermediate. ② 3-4, 6-12 almost equal

to 8 & 13 of ①. Horn in 5 its apical margin  
up out of line with the other. Depression very  
slight but more distinct than Sibrie. D.  
formed 4 glandular spots, 2 from front seg. 2 from  
post seg., showing then in 3 & 4-5 elsewhere  
consolidated into a single pair enclosed  
in an ill defined hollow. Adorsal not seen.

Lat. 2 glandular ring dot (inters.) [the seg.  
now absent] enclosed in ill defined hollow.  
S-V slight inters. hollow without distinct  
glandular center. Shape squarish elongated



⑤ & 6 are approximated and  
10 & 11 less so. Skin coarse  
watery granular, not apparent  
the glandular dots nearly  
smooth. Spine short, with  
separate tip but not so distinct  
as in Sibrie. ③ 2 setae form a  
small pale wart. Ridges uniform no spots another  
A 9 mm (total) paler than other but same shape  
B 12 mm Horns & ridges bright red shading  
to pinkish on edge of ridges. Body flesh colored  
large irregular areas around glandular dots  
outlined in blackish as also space d. line  
the areas as large as to be confined esp on sides  
giving d. & lat. areas a blackish tint as if  
marked by circled lines

1828 Quetta, Brit. east. V. Feb. 229.

Superficial of species.

Species, some brown; some more yellowish brown more less distinct brown or a broad shade brown.

♂ + ♀ exactly similar, similar with nearly brown

♀ slightly paler and more translucent than ♂.

They frequently yellowish brown; habitat eastern

They seldom yellowish; habitat western

Species some brown; the small paler; few wings covered by the  
since paler than the ground color except where the 3rd pale

2nd pale pale brown; the 3rd nearly white; often

One with 1 pair and 1 pair  
also and still had 1 pair  
callitrya in 212 with stage  
the 1st stage one 1 pair the  
absent on its own mark.

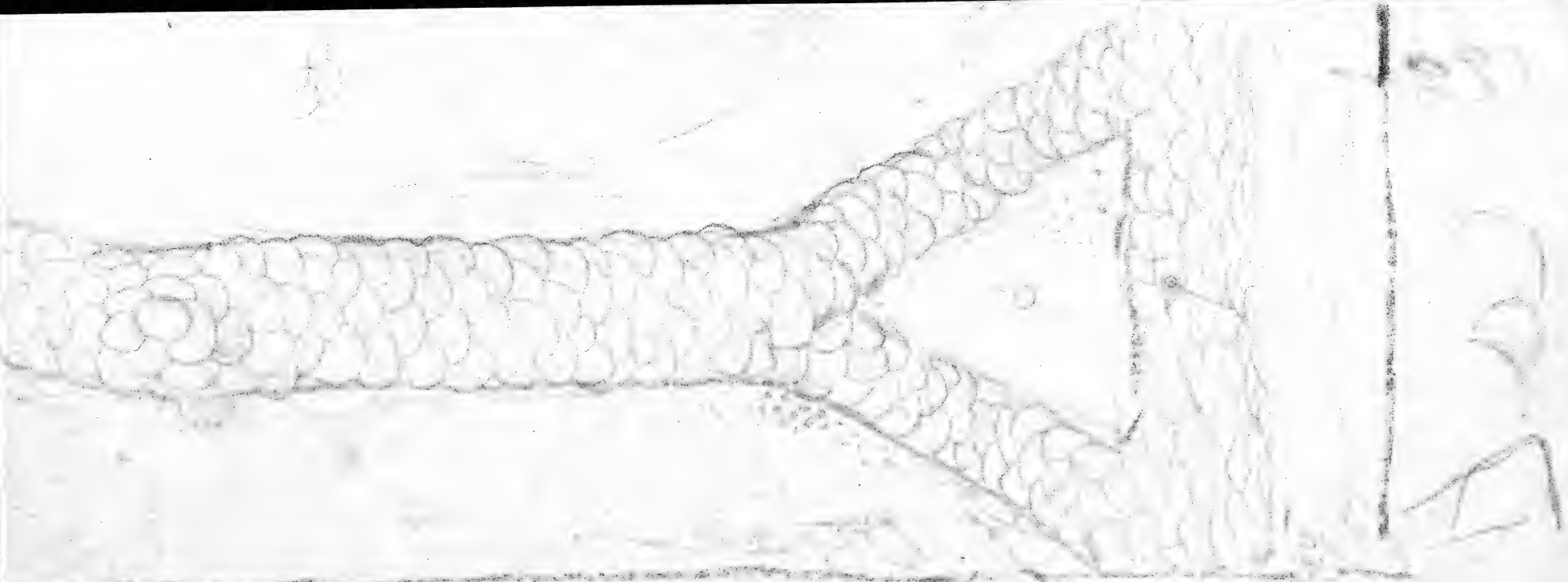
Species.

Species.

Species.

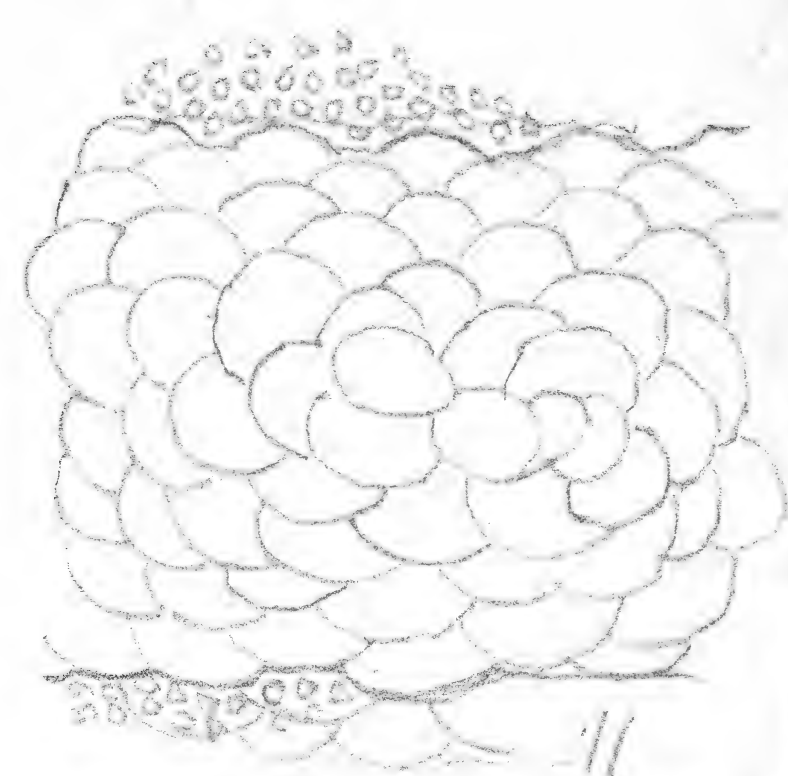


		I	II	III	IV	V	VI	VII	VIII
Stimulea *	Length	1.3	1.7-2	2.2-3	3-4.7	9-9.5	11-13	13-18.5	16-23
	Nds.	.3	.4	.5	.7	1	1.4	2.1	3.0
	Calc.	.25	.35	.50	.72	1.0	1.47	2.1	3.0 4.70
γ-inversa	Length	1.5	-	2.5-2.8	3.2-4.2	5.5-7 <sup>4.5</sup>	7.5-9.8	10.5-13	15
	Nds.	.3	.45	.65	.75	1.0			
	Calc.	1.3	1.9	2.8	4.2	6.5	9.9	19	not 6.6
Scapha	Length	1	1.5-2.2	2.4-3	3.4-4.5	4.5-6.6	6.5-9.8		6
	Nds.	.3	.4	.5	.7	1.1	1.2		
	Calc.	1.5	- - - 2.2	- - - 3.1	- - - 4.6	- - - 6.6	- - - 9.5	not 20	
pallida 209	Length	1.5		2.6-2.7	4.5	5.7-6.5	7.5-9.5		
	Nds.	-		.5	.85	1	1.4		
	Calc.	.25	.35	.5	.7	1.0	1.4	not 20	
geminata	Length			- 3.4	4.3	- 7	7.7-11(14)	[5-10]	
	Nds.			.5	.7	1	1.4		
	*	1.4	2.1	3.2	5.0	7.6	13.	20.	30. 4.66



23. *triple*  
 22. *carinata*  
 21. *depressa*

*very small to medium*  
*very small to medium*  
*very small to medium*





190

47 West 49<sup>th</sup> Street

New York, March 4, 1896

Mrs H. G. Dyar

To Dr. Arthur R. Gage, Dr.

Dec-95 - Feb. 10/96

For Professional Services.

103

Filling 12<sup>a</sup> cavities. Gold & plastic fillings

Treating and filling canal in Molar

Dressing out cavities

Cleaning teeth

Received Payment.

A. R. Gage,

# Records for Euclea

1895

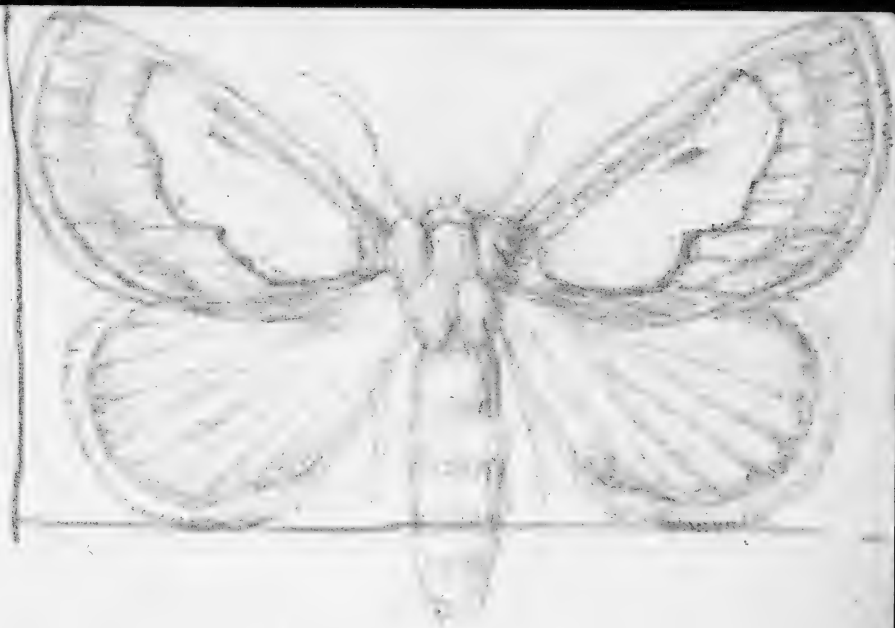
Doel showed me about 30 / lar-  
red larvae, all but 1 having the  
single black spot, the one had  
both pair.

Worms raised by Annie Minton  
from Dells 1894 larvae, pre-  
sumably same as above came  
out monitor interjecta and  
trans. ad. delphinii.

The one 4 left larva spun &  
came out at Newburgh 2  
of the former with large piece  
patch' or elliottii % Miss Minton.

Others came out monitor 1896; one  
monita reared with ♂ of from  
querceti from Newburgh.





Ver 3 (brown back)

Aug 27 stage IV to head.

~~VI~~ length 27-1 ? and

Aug 28 eating length 8.5

Aug 29 " " 9.6

Aug 30 " " 10.0

Aug 31 " " 10.7

Sep 1 " " 11.5

Sep 2 (th. stand) " 10.5

Sep 15 VII eating 11.5

Sep 16 " " 12.5

Sep 17 " " 13.5



ved payment for JAMES GOR

8 12.6  
9 14.  
10 14.5  
11 15.5



other in America  
Sept 13 (other) 11.5

Sept 12 — 15.3

Sept 13 white to J

# Second ocellular checks. 352f

Egg and newly hatched larvae from Univ. Quarter - July 31, 1996  
 Egg collected next (July 30), fresh  
 hatched had not eaten when  
 received. Egg collected in leaf.

July 31	1.1	Spiny with brown line	
Aug 1	1.1	eating	
" 2	1.3	"	
" 3	1.4	"	
" 4	1.7	undulating	
" 5	"	hatched	
" 6	1.5	wide gone	3 mouth
" 7	2.2	eating	
" 8	2.6	"	
" 9	2.6	hatched	
" 10	"	"	
" 11	2.7	eating	
" 12	3.9	"	
" 13	3.9	hatched	
" 14	4.3	still	
" 15	4.8	eating	
" 16	5.5	"	
" 17	"	"	
" 18-19		hatched	



Aug	20	6.5	hide gone	
"	21	7.2	eating	
"	22	8.5	"	
"	23	8.6	to bed	
"	24	"	"	
"	25	8.2	"	
<hr/>				
"	26	9.8	eating	
"	27	10.2	"	
"	28	12	"	
"	29	11.5	still	
"	30	"	to bed	
"	31	"	"	

Sept	1	12.7	still	
"	2	13.5	eating	
"	3	13.8	"	
"	4	14.6	still	
"	5	15	eating	
"	6	"	"	

W 2

Aug 27 stage VI but  
not very big.

Aug 28 9.8 stopped eating?

Aug 29 on bank low

Aug 30 Wind, by tide 9.6

Aug 31 VII 10.6

Sept 1 eating 12.1

" 2 " 12.1

" 3 " 13.1

" 4 " 14.7

" 5 " 14.9

" 6 on beach? 14.5

" 7 eating 14.0



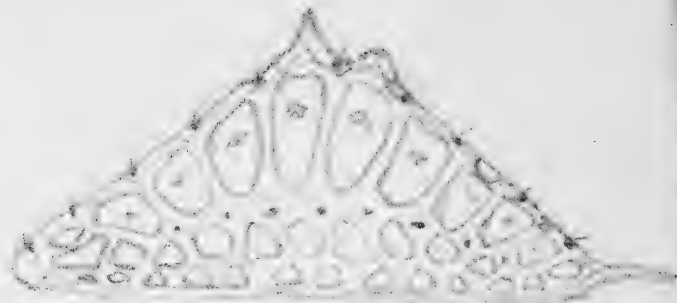
Almost no  
humps

John Clarke

5/4/9 entering 15 min  
12 9 6 15.1

in swim  
4 min  
all white  
5 min

11 dorsal plates  
3-4 to 13-14



2-bumped scapula on back  
only. Scapulae to 2.5.  
Sep 22 1895 30 cm green,  
back like "no 3" but a  
little more brown.

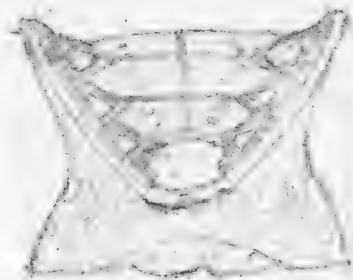
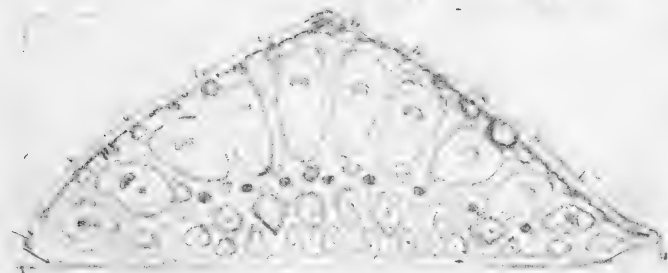




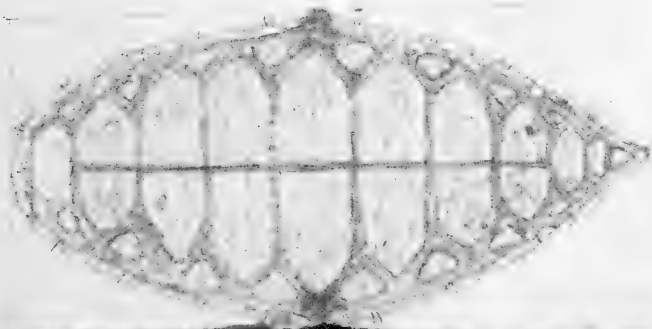


	15	4.6	(6.2) (13.5)	Aug 9	9.2
	16	4.9		10	3.0
Aug	17	4.7			
	24	7.2		" 12	3.4
	25	6.6		13	3.8
	26	5.8		14	4.0
	27	6.8			
	28	8.5			
	29	9.6			
	30	10			
Aug	31	10.7			
	1	11.5			
	2	10.5			
VII	5	11.5			
	6	12.5			
	7	13.5			
	8	13.6			
	9	14			
	10	14.5			
	11	15.5			
	12	15.2			
Aug	13	16.2			

scapha end of atrop. VI x 5 (not)



Hickory  
black oak  
hemp  
clubmoss  
green moss





RALD.

riector.

: limits) and  
(ee).

Three Mos.	One Mo.
\$2 50	\$1.00
2 00	.80
.50	....
.40	....
.30	....

y editions in  
er copy addi-

oreign Coun-  
Postal

Three Mos.	One Mo.
\$4.75	\$1.75
3 60	1 35
1.15	.40
.70	....
.40	....
1.00	....

each paper  
expires.

Mr. 22

22

TON

The Subscription

Received

# Scapha checks 554

From Miss Morton Jan 30 1896

Had eaten; tubercles as in I

Jan 30	1.8	1.8	1.8	1.9	⊕
" 31	1.8	1.8	1.9	1.9	still

Aug 1	1.8	by hide	Smooth
-------	-----	---------	--------

" 2	2.4	eating	
-----	-----	--------	--

" 3	2.4	"	⊕
-----	-----	---	---

" 4	2.9	"	
-----	-----	---	--

" 5	"	to feed	
-----	---	---------	--

" 6	"	"	✓ II
-----	---	---	------

" 7	3.4	eating	⊕
-----	-----	--------	---

" 8	3.9	"	
-----	-----	---	--

" 9	3.9	still	
-----	-----	-------	--

" 10	4.4	hide gone	⊕
------	-----	-----------	---

" 11	4.8	water, hide lost	
------	-----	------------------	--

" 12	5.6	hide lost	
------	-----	-----------	--

" 13	"	to feed	
------	---	---------	--

" 14	5.8	eating hide	
------	-----	-------------	--

" 15	6.4	eating	
------	-----	--------	--

" 16	6.7	"	
------	-----	---	--

" 17	7.9	"	
------	-----	---	--

" 18	"	to feed	
------	---	---------	--

" 19	"	"	
------	---	---	--

" 20	7.3	"	
------	-----	---	--

Aug 21 8.5 eating

" 22 10.5 "

" 23 10.8 "

" 24 12 "

" 25 12 to shed

" 26 " "

" 27 " "

" 28 13 still

" 29 14 eating

" 30 15 "

" 31 15.1 "

Sept 1 16.2 still

" 2 15.5 eating

" 3 17 "

" 4 18 still

" 5 17 eating

" 6 17.5 all turned white

and stopped eating

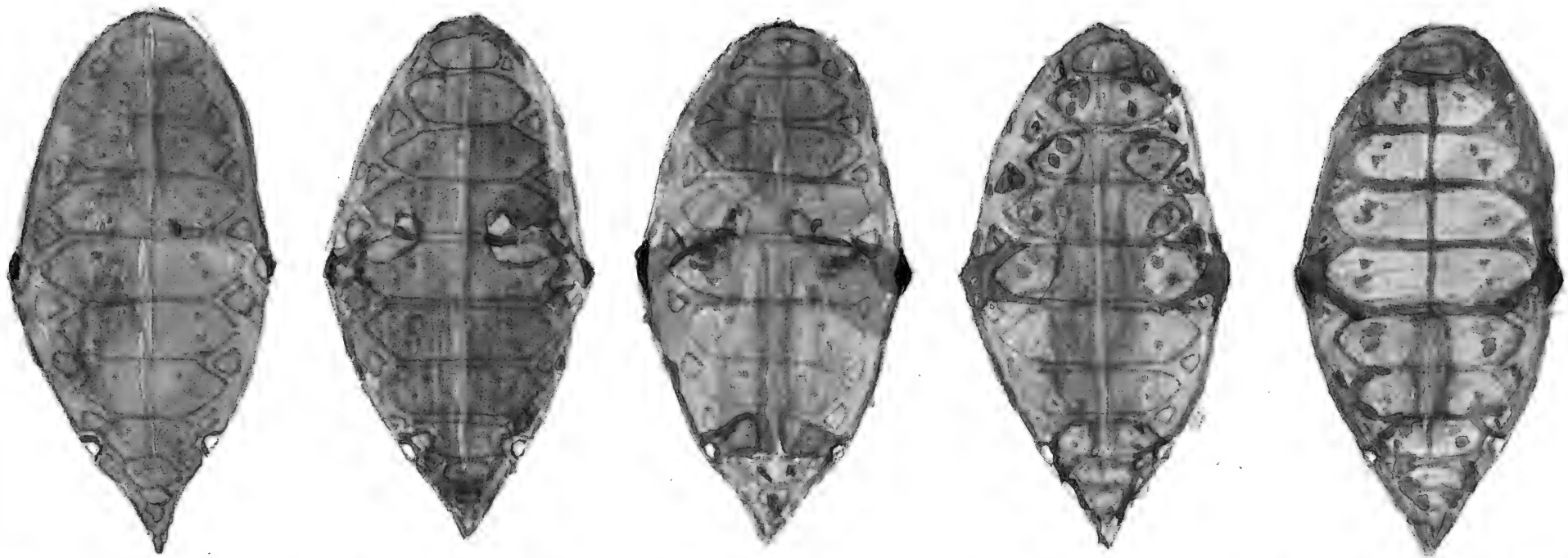
Low humidity  
Long Island  
Scaple

Green, no  
very little  
brown





"No 3"



From a series collected with the Deutenmiller at Long Island City (Aug. 20)  
on Myrica cerifera some found only from the sides.

have no criterion as  
Physiological chara  
among other groups  
whether they are  
used or not. Eled  
are less variable,

But granting the  
constant for practice  
be able to distinguish  
The liquefaction of  
growth forms and  
indefinite or difficult  
more positive tests.  
be universally appli

2097 With many blenched 21

Diary

Sept 6 5.2 (told)

Sept 7 (by hide)

" 8 5.5 eating

" 9 5.5 "

" 10 5.5 "

" 11 5.5 "

" 12 5.8 "

" 13 5.7 (wink)

" 16 5.7 by hide

" 18 5.7 eating

Elliptical skin coarsely  
granular depression used

swapped as in Intercala

5th line yellow 3-tail

in dorsal not almost to base

edge of lat. depression 6-8

an elliptical burnt brown

patch slightly curved on

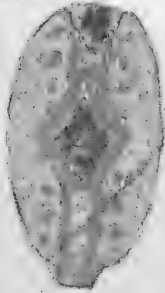
edge 6-8, d.s. space 1/2

line with dirty green

red 3-4-



Shed Sept 7 Depressed spaces deep sharp edged  
into skin coarsely wrinkled granular  
Secrets marks later. Seem to be pallida



Shed Sept 16 Same as first The 2 spots  
showed a tendency to join but  
the larva was very sickly and  
only ate a little. Dried 15x23





Code stage I on [209] B III

black

late July 27 1894

Bellport 2 3

July 27 1.15

II

Just first

" 28 2.1

after wet

" 29 1.4

Dispersed.

" 30 1.6

" 31 1.6 th

to be made

Aug 1 1.7

mountain, the

" 2 1.6 4

mature slender

" 3 1.8 4

ascended. ①

" 4 2.0 4

ascending, disperse ②

" 5 2.2 4

at; rounded, ③

" 6 2.2 4

at; rounded, ④

" 7 2.2 4

at; rounded, ⑤

shell quadrate, sides angled to,

⑥ a moderate ridge, 3-4 mm

retreated, all granular ground

face pale green, a faint yellow

space centrally, no marks.

Referred species all present, shell

just like, the lathe-rod ridges

narrow, distant of one row of

large clear granules. Each is a row

to one wall but not 2 or 3 in a row

on side. III stage. Shell not

perforated quadrate all 1/2 to 1 year.







2098

LL

IV

Aug 7 2.2 1 Lido 2y8 big net 1st  
 " 8 2.4 Heavy on hole covering  
 " 10 3.1 still 3 dy. spans.  
 to shed (just 21 net)



THE HISTORY OF THE  
CITY OF BOSTON  
FROM 1630 TO 1880  
BY  
JOHN B. HENNING

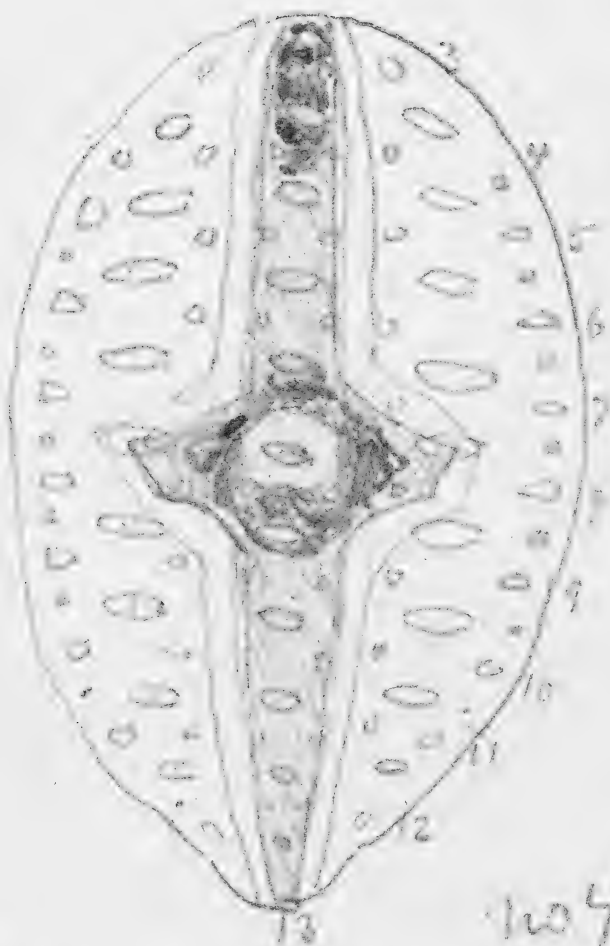


2





5530 *Salix L.*  
end of step 11 1977



no 4



purplish black



crimson



yellow

Handwritten text at the top left, possibly a name or title.

Handwritten text at the top right, possibly a name or title.

Handwritten text in the upper right corner, possibly a date or location.



Handwritten text at the bottom left, possibly a name or title.

Handwritten text at the bottom right, possibly a date or location.



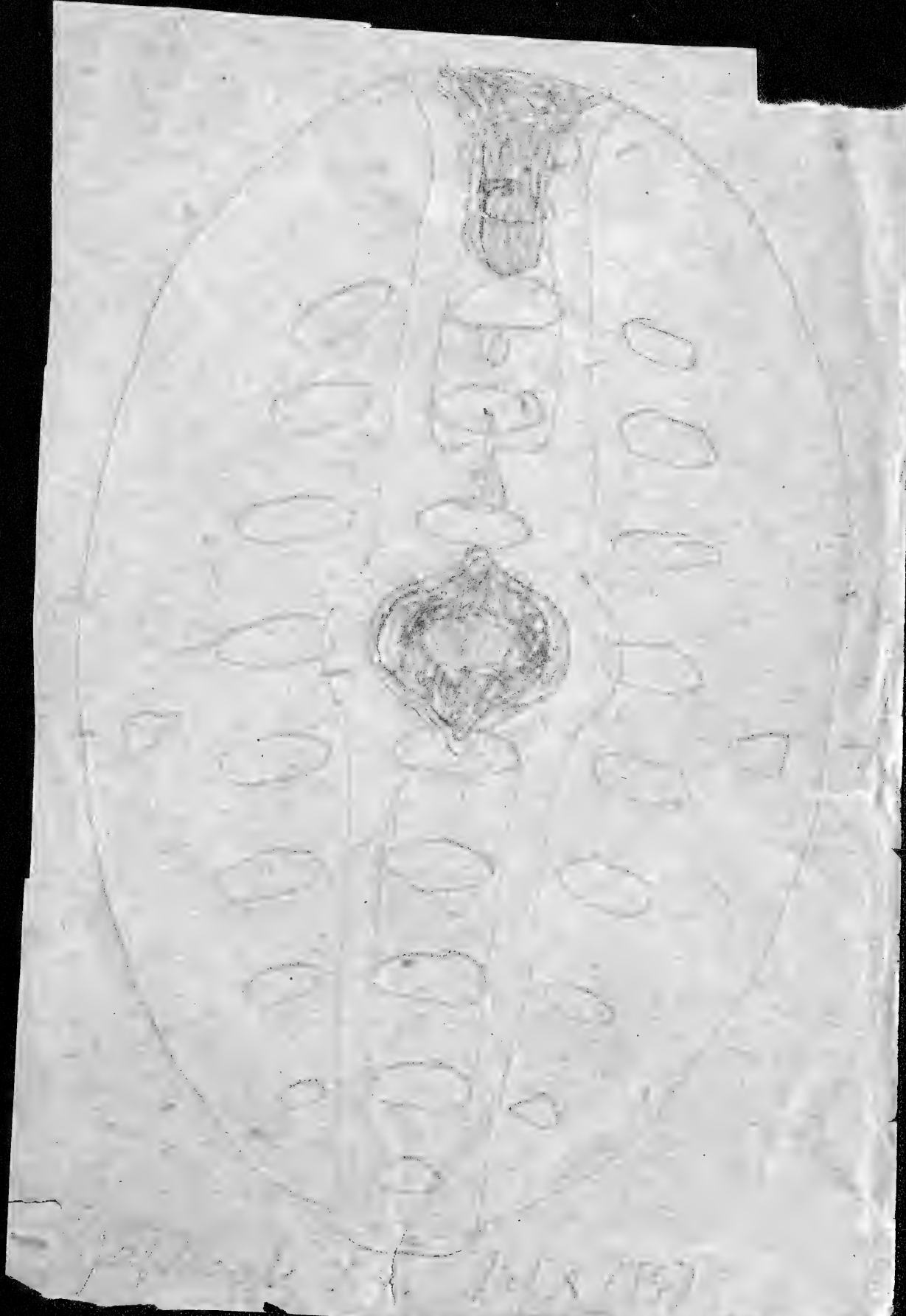


Diagram of the human torso showing internal organs.

U.S. POSTAGE DUE FOR  
P. FORM 4000  
CEN

1881

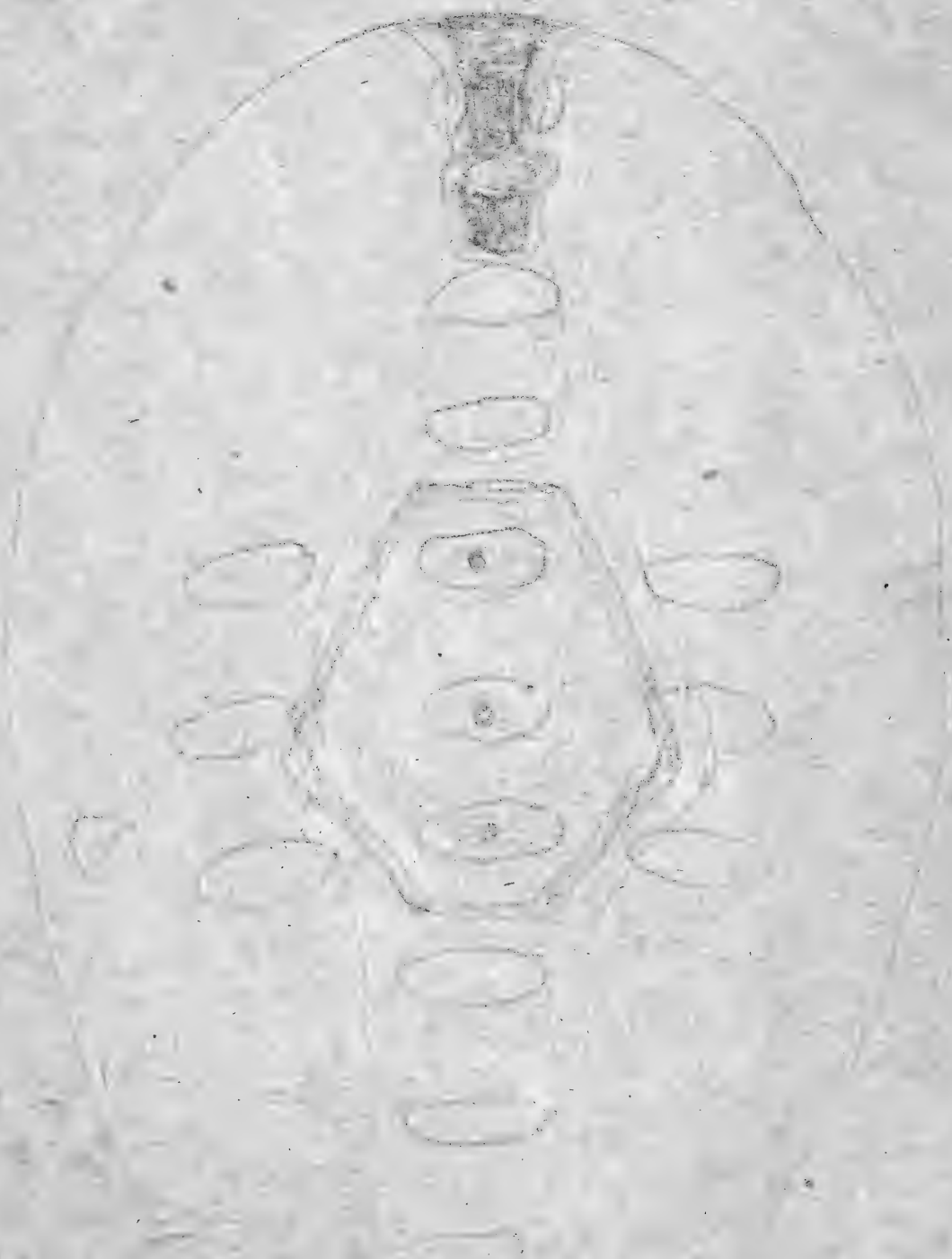


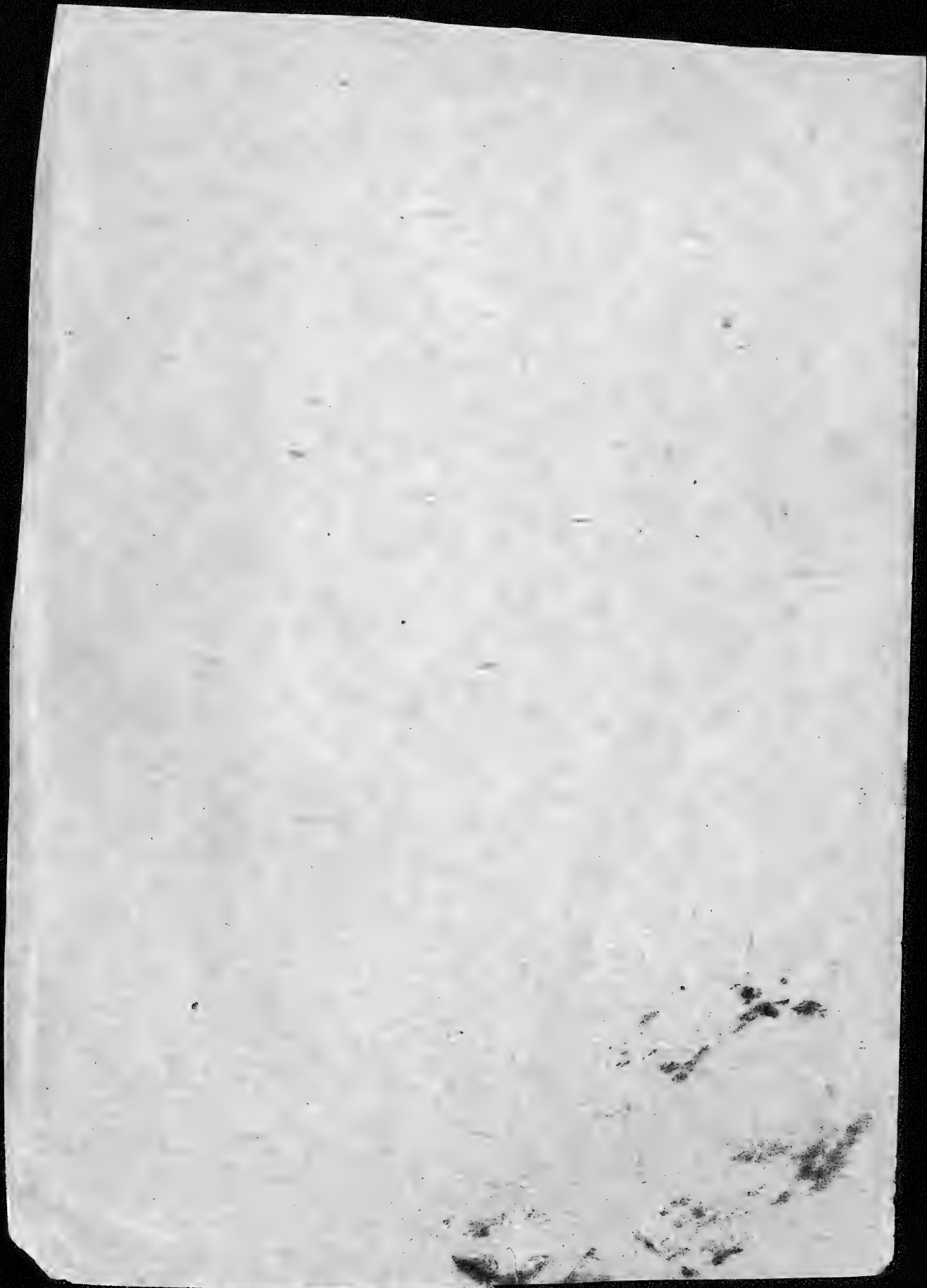
Sketch of a face, possibly a profile or frontal view, with a central vertical axis and symmetrical features.



5 Mar  
et

Wm  
L. J.







as in previous stage. Length 6.5 mm (eating birds)  
 setae present, very fine. Plates elongated, humped  
 anterior sides well scaled. D. plate are divided  
 by a slight dorsal raised line. Hump on 7-8 quite  
 well marked, tail round pointed. Shape of anal. plate  
 lateral plate well marked, upper s-v with distinct  
 glandular center. Spiracles round, yellowish with  
 dark center. Thorax creamy brown, the ridge above

all the d. lateral lines and a narrow  
 d. line on plates 2-8 dark brown; hump  
 off plate 5 very dark. Glandular center  
 of plate also dark. A white spot in  
 ridge at plate 8 and a little one  
 at plate 7 seen best from side. Side  
 plate 1 (not) and 3 and 4 dark deep green  
 glandular center of upper s-v dark.  
 Seg. on ridge from each side a series of  
 dark round translucent spots which  
 probably are the heads of louse and in  
 case a row of drops of clear fluid seen  
 from there but disappeared later.  
 Aug 24 (1st inst) 8.4 mm  
 (2nd inst) 7.4  
 (3rd inst) 7.2 (II)  
 (1st inst) 8.5  
 (2nd inst) 8.3  
 (3rd inst) 8.6  
 (1st inst) 8.5  
 (2nd inst) 8.2  
 (3rd inst) 8.8  
 (1st inst) 8.2  
 (2nd inst) 9.8  
 (3rd inst) 9.5

Aug 25 (1st inst) 8.5  
 (2nd inst) 8.2  
 (3rd inst) 8.8  
 (1st inst) 8.2  
 (2nd inst) 9.8  
 (3rd inst) 9.5  
 Aug 26 (1st inst) 8.5  
 (2nd inst) 8.2  
 (3rd inst) 8.8  
 (1st inst) 8.2  
 (2nd inst) 9.8  
 (3rd inst) 9.5  
 Aug 27 (1st inst) 8.5  
 (2nd inst) 8.2  
 (3rd inst) 8.8  
 (1st inst) 8.2  
 (2nd inst) 9.8  
 (3rd inst) 9.5  
 Aug 28 (1st inst) 8.5  
 (2nd inst) 8.2  
 (3rd inst) 8.8  
 (1st inst) 8.2  
 (2nd inst) 9.8  
 (3rd inst) 9.5  
 Aug 29 (1st inst) 8.5  
 (2nd inst) 8.2  
 (3rd inst) 8.8  
 (1st inst) 8.2  
 (2nd inst) 9.8  
 (3rd inst) 9.5  
 Aug 30 (1st inst) 8.5  
 (2nd inst) 8.2  
 (3rd inst) 8.8  
 (1st inst) 8.2  
 (2nd inst) 9.8  
 (3rd inst) 9.5

Sept 10. Last stage seems to have a  
 differential character from the preceding  
 ones. Greatest length of sample 13.1 mm

Big black Arctium from a boy Jefferson High School  
 914 Aug 7 1951. Black, the body annulate  
 with velvety black & more shiny brown  
 black, apical reddish. Vents large, I  
 and II black, III-VI white with shiny black  
 tubercles. Hair long, soft, Spinosus  
 like, black, the ends of the longest  
 hairs reddish light brown. A few of the  
 s-v hairs protracted. Head black, about 2  
 mm. Larva curls in a ball 20 mm diam

7d ~~From European sp.~~ Aug 26 13.3 X 6.4  
Still white - pinkish green, shading brown towards  
the sides. Aug 27 13.7 X 5.5 Aug 28 13.5 X 6.8 <sup>rd</sup> Aug 29 about 1/2  
in. turned white. 1/2 in. to 1 in. ? On bottom of water  
2 spec Aug 29 in the moss. faded and



3719

*Lymantria* (*Lasychia rossi*?) collected by  
Richard B. Seager, of Jefferson Highlands, N.H.,  
on Mt. Adams on rocks above timber line  
several examples. Received this Aug 18, 1895.  
Head 3.2 mm. vertex brown black, S black,  
a reddish shade on front side of head.  
Nose 3 above stig. ant on 3 and 4, whitish  
tentacle tubercles 1, on 10 and 11 behind  
small 1, in one example much curved  
up by the base, nose small, is very small  
slig. prot. leg plate distinct. Body black  
with a frosty gray shade; hair thick  
all tubercled, some heavily feathered but  
none plumose. <sup>1, 5, 9 and 12</sup> a little more  
closely tufted, but no true tuft  
and no pencils. Hair gray, mixed with  
black, with light yellow hair on outside  
of ii, 5-13 and all lower, all the hair  
bunches on thorax. S & V have bunches small.  
(see blow sample.) Underneath a black skin  
on Mt. Washington.

Another form from Mt. Washington, ~~not~~  
~~by this~~ Hagen. Hd 2.4. Ret. glands pale reddish  
brown. Hair faded gray & black mixed, soft  
dark the yellow hair less numerous, densely  
only 7-9 and on thorax from all the parts but  
faint S & V. The faded gray hair are densely  
feathery i-v, the black & yellow ones only ap-  
parent, vi with few hair and short. Hair mostly  
very long, quite even but not regularly so, are  
tufted on pencils. Curls up in a ball when  
arrested when disturbed.

Got three more eating blueberry and white birch  
about 3 miles above the Glen carriage road from  
summit of Mt. Washington, Aug 22 1895. Like  
the other, more slender. Gray in and yellow hair



557

*Uctia* from *Urosalpinx* sent by Mrs. Hagen  
 to study black, is 2.5 in. body velvety *Uctia*  
*lesca*, black, vent iii light yellow, the  
 others all faintly brownish, all under the  
 subvent and stiff rather than springy  
 hair black. When hatched the sutures are  
 marked by a narrow shiny line contrasting  
 with <sup>velvety</sup> black body. Base of warts i and ii shiny.  
 a few longer black hair just. (see *Eggs*)  
 abdominal legs light yellow. The feet black.  
 (Is this *Urosalpinx* *quercus*  
 of Hayden? sounds like  
 it)

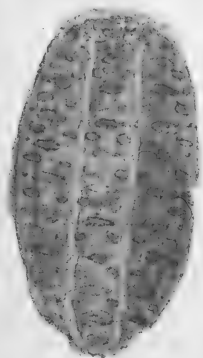
$$558 = 667$$

2 Codes in sheet for "in case" of 20 Parks  
N. of 8-14 4 1994. 20 1994. 1994. 1994.

[illegible]

Locality: ...  
...  
...  
...  
...  
...  
... add ...  
...  
...  
To note at 2  
the color wood ...  
and the color ...

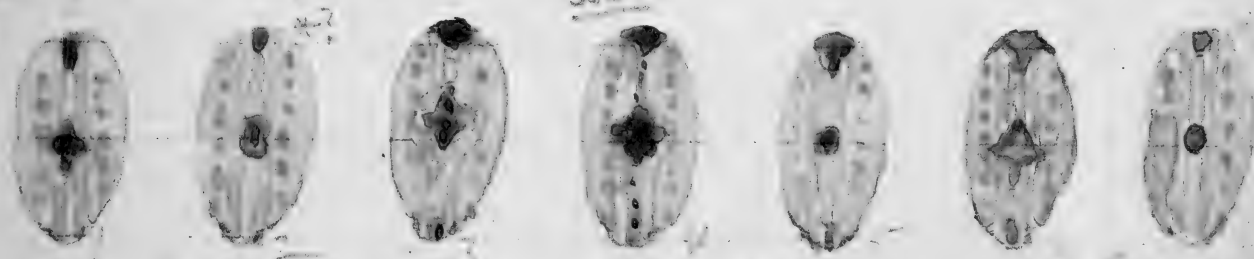
2 extracted ...  
... yellowish ...



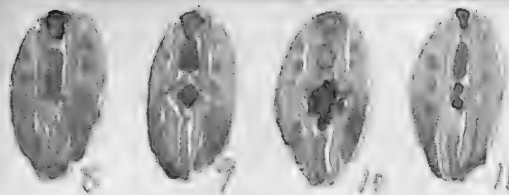
Had some trouble with the engine, but got it going again. The engine is now running very fine and the boat is now ready to start. The engine is now running very fine and the boat is now ready to start. The engine is now running very fine and the boat is now ready to start.

with a head .5 mm

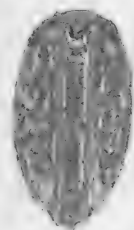
7 at 1st 21 J. Sept 9 1896 all in chestnut.  
Lengths all 9-16 in. 586 c



Name of the bird you collected. 1.5  
 Date of capture. 2.0  
 Locality. 3.0  
 Sex. 4.0  
 Age. 5.0  
 Length. 6.0  
 Weight. 7.0  
 Measurements. 8.0  
 Description. 9.0  
 Remarks. 10.0



Sept 14 1896 (Small)

[illegible]



slightly passing into red at apex of S. 2 green  
 and sometimes white. fine brown or black

Aug 10. All mostly whitish. S. a few spots of  
 red. all fine little green and yellow. S. a  
 red half. Some in white to w. edge. S. fine  
 white obscure.

Sent cocoons to Annie Martin. Nothing out by  
 July 25-1896.

Calculation length

I 7-1.2 (70mm)

II 1.0-1.5

III 1.5-2.2

IV 2.2-3.1

V 3.1-4.4 A3-6

VI 4.4-6.3 C4-5-6 7-12

VII 6.3-9.2 B6-8-13 9-12

538 B, C = 669

Had Lee over on June 22, 23, 24, 1897. One  
 a larva collected from ♀, the regular  
 caecoma ♀

Calc. — — 1.2 1.83 2.77 4.2  $\frac{66}{100}$   
 Found 1.2 2.2 3.2 4.2

559

*Apotele lithospila* (P.) on the strand. Had 1st  
 larva on May Sept. 4 1898. Hd blackish,  
 green yellow to above apex of lobes dark  
 brown dotted, turning down into angle of  
 wing. (Hd 2.2) Body length up to 4.4  
 and 12 a little angularly enlarged, from  
 like *gutta* etc. 1 body small and general  
 hairy, a few fine 2d S-V. Side green,  
 a d. dark hairy band edged with yellow  
 3- and 4/13 slightly indented on S, but not  
 reaching it till on 8-12. S. indented on  
 between II VIII gradually, but not  
 it just over II 1/2, turning to be at 1/2  
 On 8-9 it is black at apex of S. S. a  
 fine center, with a faint pale line  
 whitish. It has legs blackish. S. pale  
 S-V. Some white to blackish. S. a little  
 shaded 1/2 arched. but much like  
 (Hd 2.2) (Hd 2.2) (Hd 2.2) (Hd 2.2)  
 dark of the center part, but  
 pattern quite recognizable.



most Sept 17 Hd 3.2 belated, measuring 8  
venter, from apex of lobes dark chocolate  
leaving the color extending to apertures, very  
faintly clear face of lobes and especially  
on the angle, mouth whitish. Scent  
long black & white hair. Body 12 strong  
humped, small, 10 is a square, 11 is  
less than each other than i. Hair not  
for black d, 12 is 5-11 with some fine  
white & hair fine, 5 small, 11  
like green but no green spot in  
the head. 4-6 hump slightly humped up  
not nearly so much as in green. Sides  
clear green, d. line rather light brown  
with narrow yellow edge and blackish  
shade 1-9 & narrow pale d. line  
3-13 with same wide pale before of  
slight as 5, in an elliptical patch  
7-11 (1st middle 7 before middle of 11), rather  
constricted at 12 ii

most Sept 11 Head slight 4.2 mm Green  
the skin a lobed narrow solid green

brown, showing only a few black dots, the  
color shade down the angles in freckled  
spots in a yellowish green, obsolete about  
1/2 way to cells; cells rather pale; mouth  
pale yellowish. Red green, clear, a  
little whitish fainter down the sides  
9. Head 3-13, slight swelling, chocolate  
brown very narrowly yellow edged,  
widened in 3 and when it begins expands  
with a row of 2 green. Passes inside 1 in  
4, just covers by slight expansion in  
5-7, then under below ii in 8-10, just  
over ii on 11 & narrow fainter to the square  
i, ii in 12, narrow with 13 but end of  
anal plate green. 8-9 especially the  
anterior 1 is slightly blackish shaded.  
Spinules white with black ring.  
Hair quite long, but very fine and  
sparse 1-iii sparse, the rest with a  
few 2° 3-4 white. Clasper 1 tip  
of thinness pale, then bases green.  
A number of small pale whitish

dots on the sides. Stern minutely  
spinulose. 12 is pointed elevated,  
others by rather uniform and  
weakly cylindrical. Tubercles of vent  
white. Brown lines are beautiful velvet  
green antecostal, with frosted sides.  
Sept 17. Turned olive colored to I

= georgica 7c specimen U. S. N. M. May 1895

See also Packard, Monograph 154

2613!!

Calc. 52 .86 1.4 2.4 4.0  $\frac{10}{10}$

566 [Is a form of oblique?] <sup>1895</sup>

On white oak, Van Coten St Park, Sept. 4 1895

 1 6 8 10 11 12. Partly under it.

flask color with some pale purple dots and  
large irregular blotches forming irregular  
vertical bands on 15; lateral reddish  
on 4 mm. Body green thickly longitudinal  
streaked with white, finely speckled  
with black. Black dots. A few small  
brownish white 33 lines, <sup>3-13</sup> small brownish  
the dots & adjacent as spiracles on 5, 7, 10  
& purplish markings, (traces of lateral spots  
on 1). The feet red. Wings, a bit like  
body, small white, which is visible  
a brownish olive clasp on feet 1-10  
a white band spreading on  
each edge of each where it is marked  
with a black line a fine red stripe  
on 1-10 to 4, diminishing to 11  
narrow to sides on 6, sharply angles  
<sup>90</sup> 90° & return to dorsum. Head



a little twisted column, 2 yellow with  
3 brownish streaks, fine in 8, narrow,  
white, divide again in 10, being a  
long elliptical d. pale apex, the  
brown narrow, red dotted, joining in 12

12 with a central d. purple red  
streak which joins color in middle  
of next fest. The basal part of 12  
in 13, set in a white cloud. There  
are 2 separate regions of color and a  
large brown cloud. There is smooth  
setae above but several in each  
segment.

Basal enclosed green patches  
21 like the sides, then longitudinal  
white streaks, a little heavier.

Another Bellus L. 9. Aug 15 1896 Hol. 2.3 pale  
brown a mottled purple head of each like  
much & ant. yellowish; after under 2, it  
has a short reddish horn on each side.  
Green streaked with white & dotted with  
black, a yellowish long green horn, even  
a green 4-5 on anal 10-13, white feet,  
a yellowish line 3-13, a brown spot  
above 21 & tiny dot 10. Anal feet  
all white with brown line inside. Shell

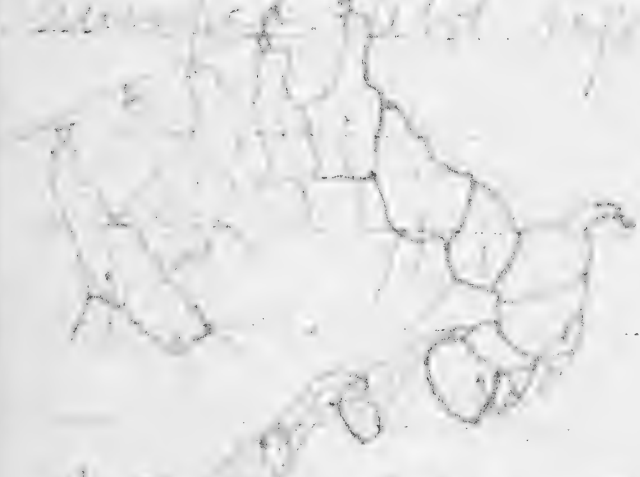
Has a spine, which is <sup>very</sup> short, about 1/2  
2013 but none at 212, only a <sup>small</sup> <sup>one</sup> <sup>at</sup> 212.  
In that horn. In stage before 6-12 @ 11  
the column is <sup>very</sup> <sup>short</sup> <sup>at</sup> <sup>on</sup> 6-11 @

Eucha elliptica (L.) larval in Virginia (see  
page) but all varying but two, and both  
these had the 9th band broken. They  
are a brilliant red & a brown color  
the breaking of the 9th band leaving  
blackish streaks on the 9th  
member and line of 6th & 7th  
sides. Bands not repeating, but  
one 6-7 complete, the 8th is  
half way through. In 9th band  
through 6-7 complete, 9-10 not  
not in the least and a red line  
horns in 11. Horns of compound with some  
green dellucos. The 10th horn color  
edge, but the middle of band on dellucos  
are square & discolorous. Short horn of dell  
much shorter in proportion (same size) than  
horn of dell, in 6-7 & 8 less than 1/2 as long  
as 5 white in elliptica they are about  
1/2. Long horns Bellus elliptica <sup>but not elliptica</sup> 05-1.4, 1.8  
dell has a pointed elliptica black dell <sup>at</sup> 13  
also @ 12. Horn elliptica?



$$562 = 56$$

Harmonia discolor from Dr. C.  
v. 1891. 12 with a large black  $\square$   
leaf 1 & 11 in square, below slightly  
curved. 1st. 1st. 1st. 1st. 13 small.



Black, shading to  
red-brown on anal  
side of wings in 14  
cent. This fact.

Section of alabaster. The matrix long conic  
fossil body, in late III, is fresh, & well  
preserved except III in some way  
of some way basis, may have a by  
plate side of 7-8 slender, rounded  
and white of fresh color, gray on  
back certainly. Hair of c-oh level  
and back of head. More conic  
colored a piece of the last stage.  
(See below for details)

563

*Hemicia* on grape, probably *concolor*  
(a *reticulata*) from W.D. Co. Mass., near  
Chicopee, Mass., coll. Sept. 13 (1895).

44 attached & connected with 2. Only no  
to 27, 28 small, above leg, also tight in leg.

Light yellow, a brown black band across  
on 3rd reach, 5-8  
only to 1st spiracle as on 1st 2nd & 3rd  
all under 1/2 - 2 black

on 3-6, 8, 10-13, 2 also black. Hairs all  
long 4-6 and a narrow band before 8  
also between 10-11 a band on 5 and 11 is  
faint light purple blue. Uterus narrow,  
all of 7 & 9 and 5-8, feet & venter yellow  
faint band of 2 white. Hair very short,  
black the vent hair but rather large, con-  
siderable white marks (either black or yellow)  
5-6 hair pale & longer. Hd dark brown  
Redescribed yellow C-sh, venter on 2; a  
band on 3 covering 3 upper venter (i+ii, ii+iii  
iii) & also venter iv+v and vi; a band on 5  
& 5-6; a band on 6, 8, 10, 11, 12 to 1/2 inch  
anal pl, black with hair, purple

patches between bands 5-6 arising from  
and a con. lateral area of 4 to  
the band is in rounded points 5-V near  
to foot, edging band of 8 in front, midit  
at lower edge of band, between bands  
10-11 and edging band 10 in front  
in the same manner as band 8.

A sac like evaginated pouch in  
2 below behind the 5-V vent.  
Spiracle apertures 1 and single large  
intersegmental glandular dot,  
pale in the purple markings.  
The feet light brown, not yellow.  
Head shiny brown black.  
Spiracle on joints a little higher up  
than those on 6-12 but vent's above.  
Around spiracle on 6 & 11 a circular  
inflated area, that on 11 projecting  
below in a lip like prolongation.

Made for structure  
of flange & not  
particularly for  
males]

564

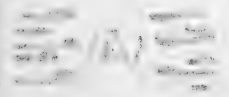
The "flanged loper" (T in old text book) Endropia  
armata in black oak, Fort Lee Sept 14 1898.  
Sitting on a part of dead leaf & eating the  
adjacent living portion. All dead leaf  
brown variegated a little with whitish  
shades with a series of dark brown spots  
and a seg. All fine spinose granular  
setae short conic, thick pointed. The  
"flange" are a process forming  
arising 5-V & 11 though the spiracle to  
the dead aspect, nearly level with the  
dorsum. On 3-4 they bear 3 setae in line  
with spiracle on 2. On 5 spiracle 6 below  
the process which bears one seta, viz. iii,  
above & behind; on 6-9 process bears IV & V  
with spiracle above; on 10-12 the spiracle  
is above but there is only a point instead  
of a process; C-sh. setae and i on 12 also  
much pointed elevation. The whitish  
shading are arranged longitudinally, streak  
ing the body with dark & light shades.  
Sp. Sept 26 Corn of piece of leaf, with large very fine hairs



Seems OK from description 565

Alcoholic larvae of *Megasthyrum yuccae*  
from Mr. L. O. Howard, ex coll. D. L.  
Upchurch, Washington D.C. (Aug 30)  
Seps irregularly branched, uniformly  
densely covered with short fine pile,  
no primary setae distinguishable.

On a large cth and other common  
plant areas one above spiracle, 2 below  
it and one less distinct on 8th joint.  
Head slightly below longitudinal plane  
small plate large, granular, pale  
and very convex. First segment in  
position of a cth, the very distinct  
notched in a trans elongate elliptical  
margin broken anteriorly & posteriorly  
in anal feet post.  $\frac{1}{3}$  of arched one  
gone. Crotchets consist of a double  
row alternating shorter & longer

 in one place a single one  
and still shorter (only one mark)  
1492 *Megasthyrum yuccae* in coll. of  
W. H. 5 from yucca fine 2nd inst. larva

Slipstream SC July 90"

Another (Dumetia box 4 disc 4) very different  
and large, weak sessile, anal plate  
projecting. Body smooth but with  $\frac{1}{2}$  inch  
spines very small fine 2nd hair all over  
Cth smooth in additional areas. This feet  
largely abraded. Crotchets abd. feet in 3  
rows, faintest, second broken, very different  
from yuccae & the rings and perfect  
elliptical, oblique, set, pointed before  
nearly.

Another (Dumetia box 4 disc 4) - body 1 inch  
and greenish, sessile, pale, cth  
not projecting, arched in 2 rows but  
head much larger than 2 on areas  
before a below spiracle but not between  
it and cth clearly marked to the latter  
Head 3 mm. This feet well developed.

This way for a small yucca, the same  
little similar. The head is fitted. No  
greenish, with 1/2 inch holes, it is not  
yuccae. The appearance is significant.




96 10  
18/6

566

Chiococca racemosa

Spring on "maxima"  
Lake Worth, Fla. Dec 25 1895 sitting on anas  
stem, singly, feet on 7 and 8 not used in rest.  
Head retractile at apex, body wider to 5-  
then greatly taper to tail; 12 & 13 are both  
small the side angle of hind feet triangular,  
projecting beyond anal plate. Horn long,  
slender, from an enlarged base  
annulets fine, distinct with numerous 2<sup>d</sup>  
setae which are situated in pale spot  
scarcely at all elevated into granules.  
Sd line continuing from middle of 2 & horn  
white shading below into side color, more  
or less pale yellow at the sharp upper  
border. D. sp. light brd green, an irregular  
but distinct greenish dorsal shaded  
greenish white band broadening and  
filling in all d space on 2-4, still dis-  
tinctly darker centered. All space below  
sd line likewise completely filled in  
with same greenish white with pale

2<sup>d</sup> dots. Spermata white with median  
line red band except on 5- which  
is white with a black dot on its post-  
side . The side color is and by  
faint darker green oblique streaks  
which run from post. edge of seg. 1 up  
& forward (reversed from usual) only on  
a single seg. 5-11. Sub str. line dorsal  
from anal feet forward to 11 white  
& yellow like sd and also faint  
shaded. Forward of 11 it becomes faint  
and is scarcely filling thorax and of 8.  
Horn pointed green with black spiracle  
apex pale. Head dark green with  
narrow obscure vertical pale band.  
Antennae prothoracic. W. 2.5 ± horn 4 mm  
Spring 28 mm.  
The larva lived Dec 25-2.30. and was found  
Resembles *Chiococca* in shape and marks  
Imago Feb 10 1896

Spun Jan 3, a large common caterpillar on *Mikania scandens*.  
 Pupa rounded, 'dole' shape, increases not markedly.  
 All pale yellow, spiracles, eyes & a ring of dorsal  
 marks black.

Imago Jan 26 1896 567 (see 569) *Zeugma 11982*  
*Copula 1896*

VII in grass, Lake with Fla, Dec 25 1895  
 (Hutchinson 2.4)

Head yellow, ocelli black, mouth brown. W.  
 12 distinct yellow; warts.

Body yellowish 3-4, 12-13 feet. Spiracles black  
 I-III, IV small. 18 distinct seg. feet, 2, 15

normal, more large. Hair dense, fine &  
 even length, black & white mixed, the

white predominating, appears pale gray  
 of anal dashed with black. On 5 and 11

dense convoluted tufts of hairs, the same  
 length as hair, but heavily fringed the black

plum. Hair all spreading. Side with  
 from III and IV on 5 and 11. On 2 few hair

on 3 long over from 3-4 the warts there as  
 in *Euchromia*. ① 3rd ② lat (=III+I) ③ 5-V (=VI)

On 2 2th with 2 tiny (each side) warts on lat  
 edge, a seg. & 5th warts, hair but few

the gray leaves of *Mikania scandens*. Skin translucent  
 without marks. Glands alone distincting a

of oral whitish sd gland. Hair dense, not  
 dense body complete. Stopped eating Dec 31. Body

dark green. Head, feet, & 12 & 13 & 14 & 15 & 16 & 17 & 18 & 19 & 20 & 21 & 22 & 23 & 24 & 25 & 26 & 27 & 28 & 29 & 30 & 31 & 32 & 33 & 34 & 35 & 36 & 37 & 38 & 39 & 40 & 41 & 42 & 43 & 44 & 45 & 46 & 47 & 48 & 49 & 50 & 51 & 52 & 53 & 54 & 55 & 56 & 57 & 58 & 59 & 60 & 61 & 62 & 63 & 64 & 65 & 66 & 67 & 68 & 69 & 70 & 71 & 72 & 73 & 74 & 75 & 76 & 77 & 78 & 79 & 80 & 81 & 82 & 83 & 84 & 85 & 86 & 87 & 88 & 89 & 90 & 91 & 92 & 93 & 94 & 95 & 96 & 97 & 98 & 99 & 100

Stopped eating Dec 31. Body  
 very white, d. ventral

dark green. Head, feet, & 12 & 13 & 14 & 15 & 16 & 17 & 18 & 19 & 20 & 21 & 22 & 23 & 24 & 25 & 26 & 27 & 28 & 29 & 30 & 31 & 32 & 33 & 34 & 35 & 36 & 37 & 38 & 39 & 40 & 41 & 42 & 43 & 44 & 45 & 46 & 47 & 48 & 49 & 50 & 51 & 52 & 53 & 54 & 55 & 56 & 57 & 58 & 59 & 60 & 61 & 62 & 63 & 64 & 65 & 66 & 67 & 68 & 69 & 70 & 71 & 72 & 73 & 74 & 75 & 76 & 77 & 78 & 79 & 80 & 81 & 82 & 83 & 84 & 85 & 86 & 87 & 88 & 89 & 90 & 91 & 92 & 93 & 94 & 95 & 96 & 97 & 98 & 99 & 100

Stopped eating Dec 31. Body  
 very white, d. ventral

dark green. Head, feet, & 12 & 13 & 14 & 15 & 16 & 17 & 18 & 19 & 20 & 21 & 22 & 23 & 24 & 25 & 26 & 27 & 28 & 29 & 30 & 31 & 32 & 33 & 34 & 35 & 36 & 37 & 38 & 39 & 40 & 41 & 42 & 43 & 44 & 45 & 46 & 47 & 48 & 49 & 50 & 51 & 52 & 53 & 54 & 55 & 56 & 57 & 58 & 59 & 60 & 61 & 62 & 63 & 64 & 65 & 66 & 67 & 68 & 69 & 70 & 71 & 72 & 73 & 74 & 75 & 76 & 77 & 78 & 79 & 80 & 81 & 82 & 83 & 84 & 85 & 86 & 87 & 88 & 89 & 90 & 91 & 92 & 93 & 94 & 95 & 96 & 97 & 98 & 99 & 100

Stopped eating Dec 31. Body  
 very white, d. ventral

dark green. Head, feet, & 12 & 13 & 14 & 15 & 16 & 17 & 18 & 19 & 20 & 21 & 22 & 23 & 24 & 25 & 26 & 27 & 28 & 29 & 30 & 31 & 32 & 33 & 34 & 35 & 36 & 37 & 38 & 39 & 40 & 41 & 42 & 43 & 44 & 45 & 46 & 47 & 48 & 49 & 50 & 51 & 52 & 53 & 54 & 55 & 56 & 57 & 58 & 59 & 60 & 61 & 62 & 63 & 64 & 65 & 66 & 67 & 68 & 69 & 70 & 71 & 72 & 73 & 74 & 75 & 76 & 77 & 78 & 79 & 80 & 81 & 82 & 83 & 84 & 85 & 86 & 87 & 88 & 89 & 90 & 91 & 92 & 93 & 94 & 95 & 96 & 97 & 98 & 99 & 100

Stopped eating Dec 31. Body  
 very white, d. ventral

568

*Lemanea dunn* from red track, from  
 road. No. 25 1895 partly hatched.

Egg. Hatched circular with flat base   
 d. aspect a circle. White, thickly mottled

into gray brown but leaving a distinct  
 though ill defined circle of white just

above base, at upper third (5th angle) and  
 a narrow one around the large black

micropylar spot. D. 1.4, height .9 mm  
 slightly shiny, laid part of adhesion,

partly or more in batches.

Stage I. Dark blackish, warts and warts  
 pale. Hair abundant black with few

very white ones, from warts and shiny  
 black, labrum pale, w. .6 ± rather square

bilobed, not notched, rounded. (3rd etc.)  
 not cut out, but as dark or whitish a smaller one

below behind stig warts  
 on 3-4

below behind stig warts  
 on 3-4

below behind stig warts  
 on 3-4

below behind stig warts  
 on 3-4

below behind stig warts  
 on 3-4

below behind stig warts  
 on 3-4

below behind stig warts  
 on 3-4

below behind stig warts  
 on 3-4

below behind stig warts  
 on 3-4



Calc.	.29	.41	.59	.84	1.2	1.7	2.45	ratio .7
Found	.3	.4	.6	.8	1.2	1.7	2.4	

569 = 567

Egg laid by ♀ Cosmocranus onychia found  
 feeding on flower of Salicaria scandens  
 Lake Umbagog, Me., Dec 28 1895. Single in a  
 space between 2 or 3 in center of tumbler.  
 Pither low conical with flat base. Smooth  
 shining translucent waxy white faintly  
 tinged with yellow. No markings on base.  
 Diam .8, height .6 mm. <sup>Setae linear rounded 6-8 µ</sup>  
<sup>single on head</sup>

Hatched juvs - 1st Colulus, eyes black, body curved  
colulus, the brain simple,  
rather long, white. Anal feet  
rather large, dist. part  $\frac{1}{2}$  2.5 mm  
(iii only)

Later the dorsal <sup>(III only)</sup> fin become blackish & the  
vent blackish. Set on back of leg like midline  
Jan 12 Body colorless but grey, head, & o. part  
1 joint 12 slightly yellowish, vent dusky.  
Are not dusky, leg plate with several brown  
VII and VIII present in dorsal, both single



(VII & VIII legs  
 to also in 13  
 through and  
 red on 2  
 red on 2, 13, 14)

has white glaze in  $\gamma$  attached to d vessel.

Head has i, ii; 2 on dorsal piece, 1 on  $\Delta$   
and 1 on line above mouth. Some eye  
setae approximated as represented.  
Sensitivity gone as cover Jan 13. Whitish, brown 2-4, 10-13  
pale yellow.

Wet Jan 14 Hd yellow shiny, eyes black, w. 4. Body whitish yellow at ends as in front; warts all black, vent small feet long, pale. Hair numerous, black & white mixed, most white spinulated. IV on 5 & 11 a little bit longer than elsewhere, but both all alike. Leg plates black. (Sk. and 1-2)

Another sent to me for plant of the perigl. Rd 1.31 (Roc)  
same. Nail & leaf from which I made the  
distill. Length 14 mm. Warts distinct cartilag.

Nov VI 18 44. I have much to write. but nothing <sup>to</sup> write. I  
 & all are just signs with which I can write. I have all  
 colors black & white, a very few brown. I am a little  
 distant, very much in the middle of the world & have the most  
 unusual number of black hair. I have 4 or 5 signs, with them

1944-1945

Sh III June 1 No. 6 White, but 6 ends yellow. White  
thick hairs 1/2 inch white, all over. Hair quite  
dense, abundant. Not at all obscuring body.  
Hairs creamily curved, 6-10 from white.

Nov IV Jan 29 Hd. ♂ + same, wants different, recent  
Nails a little darker last 5 & 11 indicating  
that traps had no pharmaceuticals.

Wendy Helbert

most Feb 17 Hcd.  $2.1 \pm$  (1.4 to 1.4) 1.4 to 1.4

answer Vol 24 H. 4. 2 = 21

Answer: (d) 1.6 (26.6% of 6.2)  $\approx 1.6$

Spencer Feb 28. Images



Buckler on *Succolobus floridana*, Lake Worth  
 Fla. Dec. 27 1915. A elliptical, flattened,  
 highest diameter 5, though not conspicuous.  
 Green, luscious (s.d.) and tapering much at  
 ends, yellowish green, a narrow yellow st line  
 a dark olive green, wavy line above st  
 line, <sup>\*</sup> deep places, whitish (palest white)  
 st line rather broad, yellow 3-13, brown  
 14-18, slender 2, 4, 5, 8, 11, 12 largest and  
 bright red, 6, 7 & 10 short, 13 rather long,  
 colorless. Lat. space very colorless,  
 shaded with light green on sides  
 ridges, 2 rows of white, separated dots  
 in broad intervening hollows. Lat. lines  
 rather long, white, 3, 4, 6-12, pale green,  
 5-8 brown tipped. A broken pale lat.  
 line. S-r space central part colorless.  
 Hd. green, jaws brown, slightly black, w 1±  
 spines colorless, 5th pair small, slender (long)  
 body 9 x 4 mm, 2.5 high. (\* most likely small 5-8  
 central dorsal row patch faint + 14-18)

15

100-2745

21 Dec 29

852

吳昌碩

100

100

1880



2

over  
water

22



1. 1000  
 2. 1000  
 3. 1000  
 4. 1000  
 5. 1000  
 6. 1000  
 7. 1000  
 8. 1000  
 9. 1000  
 10. 1000  
 11. 1000  
 12. 1000  
 13. 1000  
 14. 1000  
 15. 1000  
 16. 1000  
 17. 1000  
 18. 1000  
 19. 1000  
 20. 1000  
 21. 1000  
 22. 1000  
 23. 1000  
 24. 1000  
 25. 1000  
 26. 1000  
 27. 1000  
 28. 1000  
 29. 1000  
 30. 1000  
 31. 1000  
 32. 1000  
 33. 1000  
 34. 1000  
 35. 1000  
 36. 1000  
 37. 1000  
 38. 1000  
 39. 1000  
 40. 1000  
 41. 1000  
 42. 1000  
 43. 1000  
 44. 1000  
 45. 1000  
 46. 1000  
 47. 1000  
 48. 1000  
 49. 1000  
 50. 1000  
 51. 1000  
 52. 1000  
 53. 1000  
 54. 1000  
 55. 1000  
 56. 1000  
 57. 1000  
 58. 1000  
 59. 1000  
 60. 1000  
 61. 1000  
 62. 1000  
 63. 1000  
 64. 1000  
 65. 1000  
 66. 1000  
 67. 1000  
 68. 1000  
 69. 1000  
 70. 1000  
 71. 1000  
 72. 1000  
 73. 1000  
 74. 1000  
 75. 1000  
 76. 1000  
 77. 1000  
 78. 1000  
 79. 1000  
 80. 1000  
 81. 1000  
 82. 1000  
 83. 1000  
 84. 1000  
 85. 1000  
 86. 1000  
 87. 1000  
 88. 1000  
 89. 1000  
 90. 1000  
 91. 1000  
 92. 1000  
 93. 1000  
 94. 1000  
 95. 1000  
 96. 1000  
 97. 1000  
 98. 1000  
 99. 1000  
 100. 1000

1. 1000  
 2. 1000  
 3. 1000  
 4. 1000  
 5. 1000  
 6. 1000  
 7. 1000  
 8. 1000  
 9. 1000  
 10. 1000  
 11. 1000  
 12. 1000  
 13. 1000  
 14. 1000  
 15. 1000  
 16. 1000  
 17. 1000  
 18. 1000  
 19. 1000  
 20. 1000  
 21. 1000  
 22. 1000  
 23. 1000  
 24. 1000  
 25. 1000  
 26. 1000  
 27. 1000  
 28. 1000  
 29. 1000  
 30. 1000  
 31. 1000  
 32. 1000  
 33. 1000  
 34. 1000  
 35. 1000  
 36. 1000  
 37. 1000  
 38. 1000  
 39. 1000  
 40. 1000  
 41. 1000  
 42. 1000  
 43. 1000  
 44. 1000  
 45. 1000  
 46. 1000  
 47. 1000  
 48. 1000  
 49. 1000  
 50. 1000  
 51. 1000  
 52. 1000  
 53. 1000  
 54. 1000  
 55. 1000  
 56. 1000  
 57. 1000  
 58. 1000  
 59. 1000  
 60. 1000  
 61. 1000  
 62. 1000  
 63. 1000  
 64. 1000  
 65. 1000  
 66. 1000  
 67. 1000  
 68. 1000  
 69. 1000  
 70. 1000  
 71. 1000  
 72. 1000  
 73. 1000  
 74. 1000  
 75. 1000  
 76. 1000  
 77. 1000  
 78. 1000  
 79. 1000  
 80. 1000  
 81. 1000  
 82. 1000  
 83. 1000  
 84. 1000  
 85. 1000  
 86. 1000  
 87. 1000  
 88. 1000  
 89. 1000  
 90. 1000  
 91. 1000  
 92. 1000  
 93. 1000  
 94. 1000  
 95. 1000  
 96. 1000  
 97. 1000  
 98. 1000  
 99. 1000  
 100. 1000



- List
- |  | VI<br>10 mm 1± | VII<br>14.5 mm<br>no cult. sp. | VIII<br>18 mm - 20 mm                           |
|--|----------------|--------------------------------|---|
| [1] Dec 27 On <u>Acercola</u>                          | Shed           | Jan -                          | Shed Jan 14 end spines    L 20                  |
| [2] Dec 29 On <u>mangrove</u><br>10 mm<br>no cult. sp. | Shed           | Jan -<br>13 mm (cult. sp.)     | Shed Jan 18 14.5 mm<br>Shed: 20 13 down    L 18 |
| [3] Dec 20 On <u>Coccoloba</u>                         | end spines     | Spun.                          | L 20  |
| [4] Dec 30 On <u>Coccoloba</u>                         | end spines     | Spun.                          | L 20  |

1 pair end spines  
cult. sp. on ① 13  
② 6-12



Calc Length (and stage)

1.7 2.4 3.4 4.9 7 10 14.3 20.4

Forward

10 14.5 2.0

1± 2. 3.5

measured

②

measured

①

♂ & ♀ came out together June 3 1896. Left in box. Found mated Aug. June 4, parted by noon. Put ♀ in Tumbler with glass slide and oak leaf. Laid egg night of June 4-5 over everything mostly on the cover.

Egg singly on a little patch (2-7) slightly overlapping. Flattened, the upper surface low arched, elliptical but not of a constant shape 1.6 x .9 x .2 or thereabouts, varying in thickness as well as outline. Nearly same pattern as seen on green leaf, mottled whitish & glass pale yellow or white spots, shining; reticulation obscure, narrow, linear, apical, 4-6 sided. Areas, only seen in a strong direct light.

Hatching Night June 11-12 and AM June 12. Embryo forms curved ~~ventrally~~ ventrally, as a tail brachy. Before hatching it shortens and flattens but only slightly still compressed laterally. Another egg well flattened, emerges by a hole in the apex. Color squarish, hard visible and (post.) all shiny very pale yellowish color of egg, head and all, no marks. Length 1 mm. Setae rather long, stiff but sharp pointed, 3 from apex of each horn eyes black. 10 horns in each row ① 3-5 large - 6, 7 very small 8 large, 9-10 very small 11-12 large

② 3-4 large, 6-13 fairly large (moderate)

① 6 rounded like 4 & 5 7 to 8. Tide view shows that each 11 in ① and 9 in ②

then 3 more or less retracted below but not really

when it, setae, and edge by spinule; w. head .28 antennae prominent under the large black eye, quite large article perfectly smooth transparent. Dist. between scoli before hatching .17 mm. Horns present but shorter, setae present before hatching.

Left ♀ well & died. Many eggs 150 ±. 92 hatched



June 13 squared up. Larva more prominent, ridges sharper than larva seen. Incised by the horns looking real 'code-like'. No cast, not shed, sit by shells. Horn & the spine show through as black cones esp. visible ① 3-8, 8; 11-12.

**II** Adding AM June 14. ① 3-5, 8, 11-12 very large, rounded, heavily beaded with large stiff black spines; 6-7, 9-10 very small, rounded, 1 spine ② moderate with many spines, 3 or 4 larger than the rest. Body squarish, ridges well marked by the large tubercles, widest through 3-4; all pale yellowish white, much more opaque than before. Setae finely granular dotted red marks. Length 1.0 mm. Hd black, eye black, mouth brown; w. .3 mm, retracted







actual dark green / which is the color of the

Another taken upon Island Beach Dec 20 L 20mm. Same  
as above. (Same) but callus on above. (Horn all yellow  
only @ 4, 5 and 11 red tinged. [In yellow horn horn  
lives 1/2 of ridge, the upper 1/2 body green. Body of  
horn 2 dark green lines, the lower 1/2 in the center]  
Green lines more distinct in this code than in above

Calc. 4 .6 .84 1.2 1.7 2.4 3.5 5.0 7.7  
1.3 3.5 5.0 7

5/1

Arctian? in Coccoloba floridana, Lake Worth  
Fla. Dec. 27, 1895. IV Skin orange-brownish, a  
black sd shade 5-11, connected d. at  
ends and most pronounced there (5 & 11)  
I-III black on 5 & 11 elsewhere more brownish  
Head round, shiny brown, black on apex.  
Labrum light white; w. 1.3 mm ± Hair  
short, thin, white with a few black  
esp. on dark members and on 5 & 11.  
A short yellowish sd pencil on 4 and 12;  
a few longer pale hairs at ant. end.  
IV absent (6 lens) on abd, leg & late skin;  
two vents on 3-4 above stig and, one below  
it, 2 considerably retracted. sd pencil  
from D on 4 + ③ on 12.

VIII Large a tree hole on Coccoloba unifera  
Palm Beach, Dec 28. Head round, shiny  
mahogany red, black along sutures. Lower  
½ of D (= line above pencil) & bases of antenna  
white, shiny. W. 5 mm. Hair thick, fl-  
curving the body, uniform pale

May 19 1896 Halisidota crinita +  
Fallow out June 22

chocolate brown (crested and appearing  
darker along d line. On 4 from ① and ③  
a white pencil and a few whitest  
long hairs from same vents on 3. The  
hairs separate 3-4 exposing the skin  
at incision which is slightly orange tinted  
the three upper vents on 3 and 4 being white  
& set off by black patches on the skin.  
A white pencil from ③ on 12. Skin fleshy  
brown (as far as I can see it) sparsely white  
2 is retracted, its hairs bristles forward on  
head. Hair finely pointed. Vents i-vi on  
abd, four on 3-4. Indistinct but not full size  
Length about 30 mm. Dec 31 three more vary in  
shade from gray brown with whitish and  
on the sides to chocolate brown. Body all  
red brown or spotted with black patches  
substg, more or less all shaded with black  
except the legs. Dorsal incision 3-4 well  
exposed, set off by black and the six  
white rings (① 3, ① 3 4) the hairs from ③  
do not run more than a scattering tuft.



VII ~~Two~~ stage before, lds 3.5 mm Head red  
brown, a little blackish above the white  
line & white base of antennae. Hair  
thinner, skin shining (reticulate brown  
with black d. shade & spiracular marks  
or blackish gray shading darker strip.  
Hair brown, reticulate tinged to chocolate  
pencil same. Mark in 3-4 pinkish,  
divided by d. & light line & surrounded by  
black spotting. Long hairs from 3 scarcely  
defined into pencil brownish white.  
One shed, turned silver gray, blackish along  
the crest & in a wider patch 4-5

572

5/18/1896

1896

Arizota on live oak, West Palm Beach Jan 1  
of usual appearance (see above) 1<sup>st</sup> spines  
black, 13 long, 2<sup>nd</sup> granules sparse, white.  
Head shining red-brown. Body red-brown  
a dorsal, subdorsal (ix), lateral (iii), stigmatal  
and 5<sup>th</sup> divided black bands. Dorsal and  
stig. sharp, narrow, the others divided, the  
5<sup>th</sup> filling whole space. All except 5<sup>th</sup> are  
divided by white shaded line on the  
lower side, this below stig. line very  
distinct. All the line become obsolete on  
12, leaving the anal end and all the  
feet red-brown. Simple d. hair on 13, a  
pair on 12. W. l. 3.5-4 mm. In large  
examples the skin has a fleshy, tawny  
different from the head & plate, while the  
shaded lines tend to be broken at the 1<sup>st</sup>  
spines.

2<sup>nd</sup> 29 cut in August 1896  
A. consularis n. sp.



573

Little *Datana* perhaps *minuta* on live oak  
West Palm Beach, Fla. Jan. 1 1896. Hd black  
(sh. hd 1.7) 2 mm. Body red-brown, nearly black, shiny  
dorsal, rather entire yellow, slightly confluent  
post. Pedal & anal v. distinct but suffused  
logically shining black. Feet yellow except  
leg plates. C-th yellow except a red dorsal  
black line. Aspl, thor. & anal feet black.  
Hair all white, the 2<sup>d</sup> short & dense,  
1<sup>st</sup> longer & sparse. <sup>black</sup> molt Jan 11. Same, each  
very yellow with black central line, stripes  
fully as broad as spaces, dorsal yellow. Hair  
all white rather abundant. Hd 2.75±  
Pedal & anal v. distinct, meso & post orange  
Only one molt to last stage. Hair not  
any bit of the longest  
*Datana minuta*. See also 574.


Calc. .55 .78 1.1 1.6 2.3 (2.75) 3.3 ratio 70  
Fund .5± .75 1.2 1.6 2.2 2.8 3.3  $\sqrt{70} = .84$   
*Compusia fidelissima* 574 Feb 11

Beautiful crimson & shiny violet 1896  
(a juicy one at the same)  
larvae on *Echites umbellata*, as they are  
a plant, toward the sea Palm Beach, Fla. Jan  
2, 1896. <sup>VII</sup> Head and body beautiful crimson  
red, not shiny; warts shiny red, center  
of them shiny violet-blue, the areas  
around these warts discolored, blackish  
speckled pale orange. On 2-4 only the two  
lowest warts black; on 5, 6, 9, 10, 11 all the  
warts blue, the blackish shade predom-  
inating red; on 7, 8 & 12 warts iv-vi bluish  
Hair sparse, on 8-10 4 warts, stiff  
barkled, rather short, black; from 1 on  
3, <sup>and 13</sup> a single stiff white hair 4 times  
as long as any other project forward  
over the head, probably serving as antenna.  
A few longer back hair from 12 & 13.  
Warts i-vi & leg plate normal, iv rather  
small. On 3 and ii a weak face but  
differable, more present on 4; ii a  
single hair rather short, iii a single hair

Laid on clay, about 5 miles in diameter & then  
 was still. 3  
 Drought Feb 14 1896 ♀

Chicago Feb 14 1896 ♀

10+8 a good result (as also vi. On 2 basis from  
and a good edge of each, with before the male  
and 3-4. M. had 2.2 mm  $\pm$  2.4  $\pm$  3.3  $\pm$  2.0-3.0  
had 1.2 mm  $\pm$  1.6 - also max. had 2.2  
Stage III 1.2  $\pm$  same. The color of the body is a

Like more orange, the blackish streaks with  
 Egg on same plant. 24 on each of leaf, laid  
 scattering. Egg rounded, more than hemi-  
 spherical  with flat base where it  
 attached. Deep ochre yellow, very slightly  
 shiny. Bro 1.5 mm, height .9 mm

Weight 2.8 grams (74.5) little meat. 54.5 Carcass. 1.00

[illegible]

1/11/28 p. 1.1 cat the whole leaf - small

10/11/1911

[illegible]

*Syngasteria ephraim*

Chloro ambellata

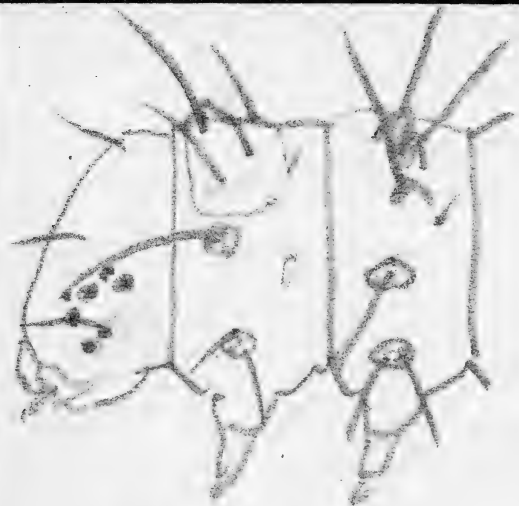
卷之五

*Colletes cressii* (Spencer) two with

*Withania* *scand.*

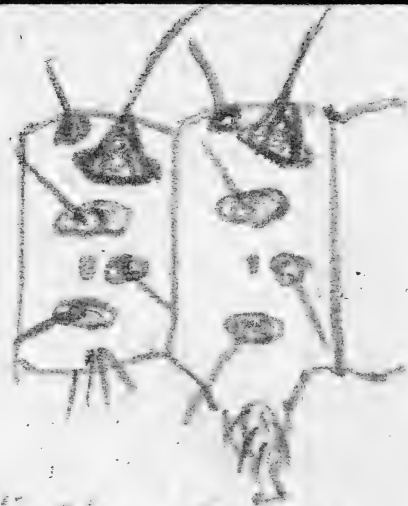
*Coccoloba pyridum*

11 *Utricularia brachyphylla*



BB 574

Stage I



VII 3 hatched 5-6

VIII 1 "



VII 1 hatched 11-13

VIII 1 "

C. the embryos with body  
not distinct. anal pl. dusky



Our Motto will always be unvarying courtesy and truthf  
 and unremitting activity in anticipating the demands of

I 44 - I 46 West I 25th

BETWEEN LENOX & SEVENTH AVENUE

Shed Feb 24

A 3.7 (sh 2.6)

B 2.8 (sh 2.3)

notice next week

sh 2.9

new shed 4±

Others shed

sh 2.5

2.2

2.3

2.5

2.6

2.4

2.5

2.5

2.4

2.3

2.5

Mar 5

4 shed again

Cornocarpus erecta (Spanish oak) tree with  
ridges, leaf like mangrove

Mikania scandens vine

Phytolacca racemosa. Raspberry

Coccoloba floridana  
" " uvifera

Simaruba glauca (bitterwood) fls. yellow

Phytolacca epilais



Echites umbellata  
"composita" fruit

Citharexylum villosum?  
fruit yellow



Larvae crazy, unable to hide in the grass & then  
sit still. Imago Feb 14 1896 ♀

iv + v a good way (as also vi. On 2 hairs from  
under a first edge of cth, small before spiracle  
and s-v. W. hd.  $3.2 \text{ mm} \pm 3.4 \pm 3.3 \pm$  L20-30

sh hd 1.2 <sup>my IV Jan 4</sup> hd. 1.6 like mat. <sup>my V Jan 15</sup> hd 2.2  
Stage III 1.2  $\pm$  like same. The color of the body is a  
light more orange, then blackish shades hind.

<sup>large</sup> Egg on same plant. 24 in back of leaf, laid  
scattered. Evenly rounded, more than hemis-  
pherical O with flat base, surface scarcely  
convex. Deep other yellow, very slightly  
shiny. Diam 1.3 mm; height .9 mm

Wt hd 2.8 mm (shd) like mat. 5th black shade  
Stage II' = VI

Legs distinct V. Length 20 mm  $\pm$   
Eggs hatched Jan 13 1896 hd hairy, shining. Body first orange  
Sept. 5, 6, 9-11 reddish purple, rest darker than  
in purple segs. blue black; tho. feet & legs black  
Hair black, strong & stiff, single from the vent  
spiracles & jointed. Hd orange w.  $.5 \pm$  after post.  
with head and antennae and last feet situated.

Sh III Jan 11 Hd. <sup>(shd 8-1)</sup> 1.5 many varied colors three  
in purple segs 5-6, 9-11 plus black. Hair black with  
the 2 long ones ant. on mat. Feet black  
Ants have central hair & radiating ones on segs ii  
which is single haired. vi present large. On thorax  
i long ones ~~the same~~ (a single hair but large, fused to line  
side of i - seg. 2 & 3 vads.)

my III Jan 28 Hds 1.1 eat the whole leaf - purple spec.

my IV Feb 4 Hd 1.7 mm <sup>mat V Feb 13</sup> Hd 2.2 (last shed Feb 16)

my V Feb 24 hd 3.7 (sh hd 2.6), 2.8 (sh 2.3)  $\left\{ \begin{array}{l} 3.5 \text{ (sh 2.7)} \\ 2.9 \text{ (sh 2.3)} \\ 3.4 \text{ (sh 2.7)} \end{array} \right\}$



